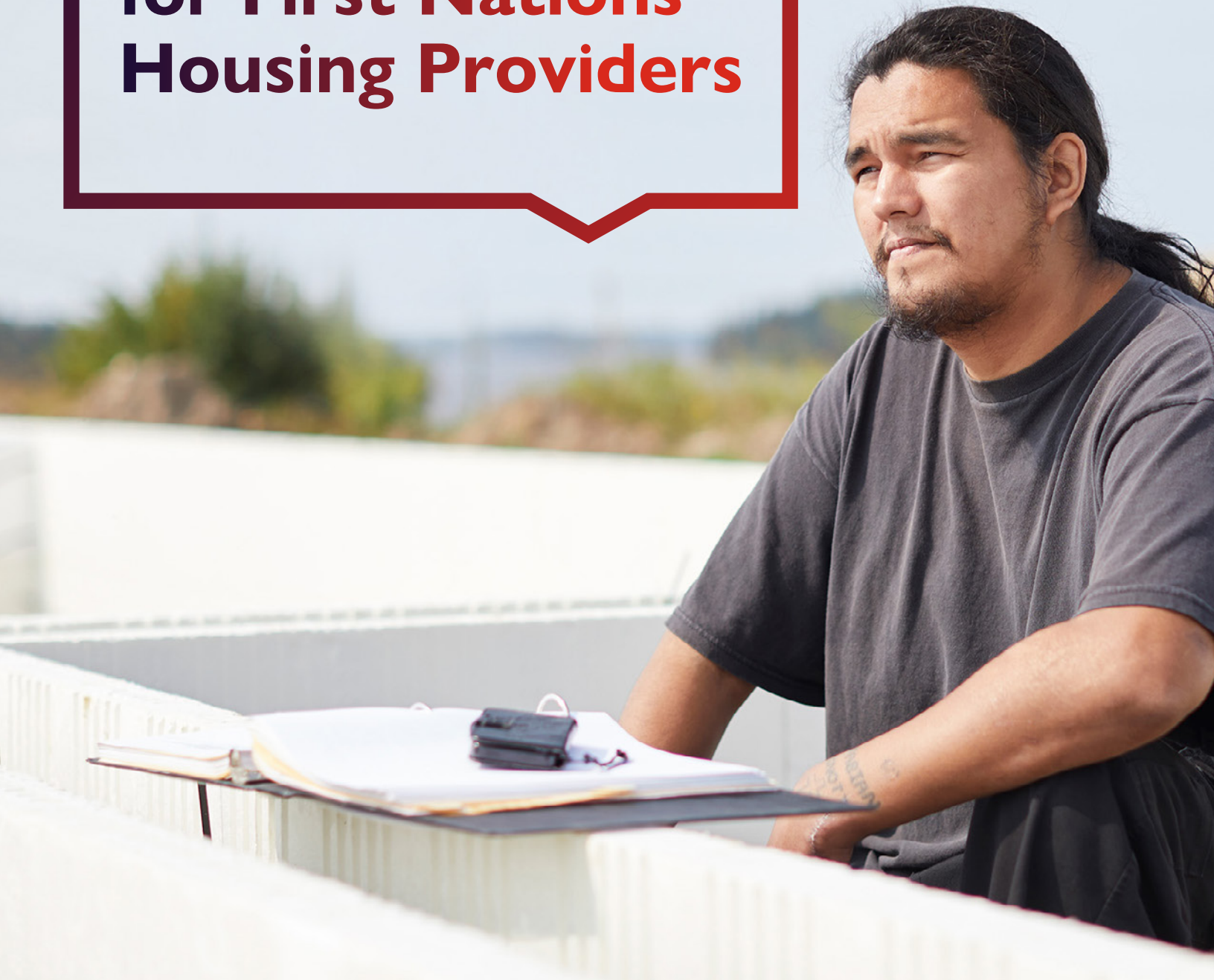


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Mould in Housing: A Resource Guide for First Nations Housing Providers



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Cette publication est aussi disponible en français sous le titre : *La moisissure dans les maisons : une trousse d'information pour les fournisseurs d'habitations des Premières Nations* (n° de produit 67300).

The information in this publication is a result of current research and knowledge. Readers should evaluate the information, materials and techniques cautiously for themselves and consult appropriate professional resources to see if the information, materials and techniques apply to them. The images and text are guides only. Project and site-specific factors (climate, cost, aesthetics) must also be considered.

Mould in Housing: A Resource Guide for First Nations Housing Providers

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Introduction

The *Resource Guide for First Nations Housing Providers* is part of the *Mould in Housing* series. The information in this guide will help First Nations housing providers recognize when there is a mould problem in the community and take the necessary steps to deal with the problem. This manual may also be suitable for:

- Chief and Council;
- First Nation housing committees, maintenance supervisors, property management/maintenance officers, construction supervisors, crew leaders, labourers;
- Health providers—community health nurses/ representatives and environmental health officers;
- Trades—builders, contractors and renovators; and
- Technical service providers (inspectors).



Introduction to mould

Mould is a common problem in houses, both in and outside First Nation communities. It can be a minor nuisance or it can have major effects on the occupants.

Mould in houses does not happen overnight. The solutions are also not immediate. To control mould, a plan needs to be put in place that:

- deals with existing mould problems;
- prevents future mould problems; and
- plans for new, mould-resistant construction.

Water damage under a window



Daily activities, such as cooking, produce moisture



Mould problems indoors are always caused by moisture or water. Water can come from leaky pipes, water condensation on cold surfaces or from water seeping through a wall, foundation, floor or roof. Moisture can come from the people living in the house and from daily activities like bathing, cooking and washing clothes. Additional moisture can also be deliberate, as in the use of humidifiers or a pot of water on a wood-burning stove. Moisture can build up indoors and become a problem if it is not dealt with quickly.

Recognizing the moisture problem in the home is a critical step in understanding mould problems and finding solutions.

This manual will help housing providers to better understand moisture and mould in houses and to help find the safest and best steps to solve the problem.

Long-term mould control

Cleaning up houses with serious mould problems is not easy. It may upset the occupants' lives and take a lot of work and money. Mould problems come back if they are not dealt with properly.

To fix mould problems for the long term, a housing provider needs to:

- understand why houses become mouldy;
- be able to recognize when a house is mouldy;
- act quickly to find and fix moisture and mould problems;
- provide clear guidelines to people or companies doing the cleanup or renovation;
- understand mould cleanup techniques that work;
- know when and why to use proper mould sampling, analysis and record keeping;
- hire trained contractors; and
- make sure every house is maintained properly.

Water damage on a ceiling

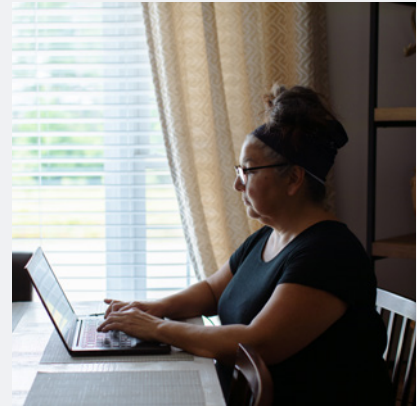


Trained contractors repairing water damage



Identifying the roles of key people

- Occupants, housing departments, environmental health officers and community health nurses/representatives are key people in making sure mould problems get dealt with properly.
- Trained contractors and renovators clean up mould, take care of the causes and restore houses.
- Trained technical service providers can provide information, advice and supervision which will help make sure that cleanup and renovation are done properly.
- Housing maintenance staff and occupants can work together to keep houses mould-free.
- Trained builders construct homes that are moisture- and mould-resistant.



The responsibilities for mould cleanup are usually shared between the occupants and the community. Arrangements will vary by community depending on knowledge and skills. Mould problems are easier to deal with if all the key players work as a team.

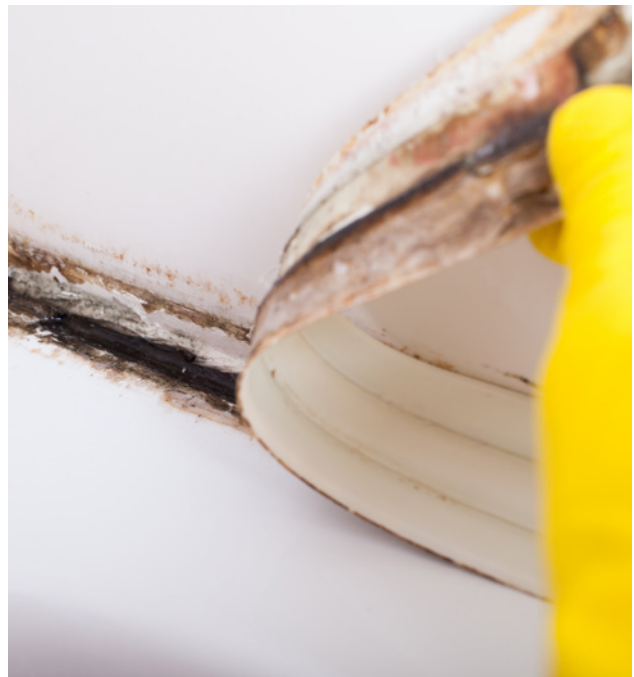
Occupants

Occupants have a very important role to play. They should:

- learn how to recognize mould in their home;
- learn about health and indoor air problems caused by mould;
- clean up mould problems before they get bigger; and
- maintain their homes to prevent mould.

The *Occupants' Manual* provides information for occupants on how to clean up mould and how to prevent mould from returning. Helping occupants take care of mould problems is a key part of good community health and housing management.

Occupants can clean up small mould problems before they get bigger



First Nations housing departments

First Nations housing departments can play a role by:

- providing information on mould to community members;
- providing information to occupants on good housekeeping (cleaning) practices to prevent mould;
- assisting with inspections of houses by technical service providers or other individuals trained
- in mould inspections;
- working with the environmental health officer or community health nurse/representative on occupancy suggestions if mould is a problem;
- helping with alternative housing arrangements, when needed;
- assisting occupants with what needs to be done to clean up mould;
- assisting with the renovation specifications for mould-contaminated houses;
- assisting occupants with arranging cleanup, renovation, inspection and preparing the house for re-occupancy;
- promoting prevention of mould from growing back through good maintenance practices;
- of houses in the community;
- organizing information sessions for occupants on how to recognize and clean up small patches of mould and help occupants identify when they need help; and
- making sure any plans for home renovations or new houses built in the community address moisture problems.

In many communities, the housing department is the key player in mould prevention and remediation.

Chief and Council

The Chief and Council can support by:

- ensuring that technical service providers and inspectors are qualified to investigate houses for mould problems;
- ensuring housing staff know about renovating and building houses so they are less likely to get mouldy;
- developing a housing policy that clearly defines the roles and responsibilities for home maintenance and repair, mould remediation, inspections, etc.; and
- supporting training for occupants on how to clean up and prevent mould.

Housing providers are key players in mould prevention



Technical service providers and inspectors

Technical service providers and inspectors may help ensure that the mould remediation specifications, contract and completed work meet the requirements of the community and occupant.

Technical service providers who are trained in mould remediation may:

- investigate mould-troubled houses;
- develop and provide specifications for workers on mould cleanup, renovation or new construction;
- oversee workers doing the cleanup, renovations and new construction;
- provide technical support on mould issues; and
- act as a resource for the community.

Environmental health officers

Environmental health officers (EHOs) may:

- inform health services staff and housing providers on how mould in houses affects public health;
- provide health information and advice about mould concerns to community members;
- respond to requests for individual health assessments in homes;
- inspect homes to help determine the severity of mould; and
- conduct microbial sampling for mould, or identify particular mould types, if necessary.

Technical service providers and inspectors may investigate mould-troubled houses and provide valuable expertise



Mould cleanup contractors

Mould cleanup contractors are trained to deal with mould problems. They may:

- provide a detailed description of the mould cleanup and remediation work and cost estimates;
- provide a detailed contract for the job;
- install temporary protective barriers to isolate the work site from the rest of the house;
- arrange for waste disposal and install temporary ventilation, if needed;
- talk to occupants to determine which furnishings are to be cleaned and which may have to be thrown away;
- decontaminate furnishings that are reusable;
- properly dispose of furniture and possessions that cannot be cleaned and reused;
- decontaminate, wash, rinse and dry areas damaged by moisture and mould;

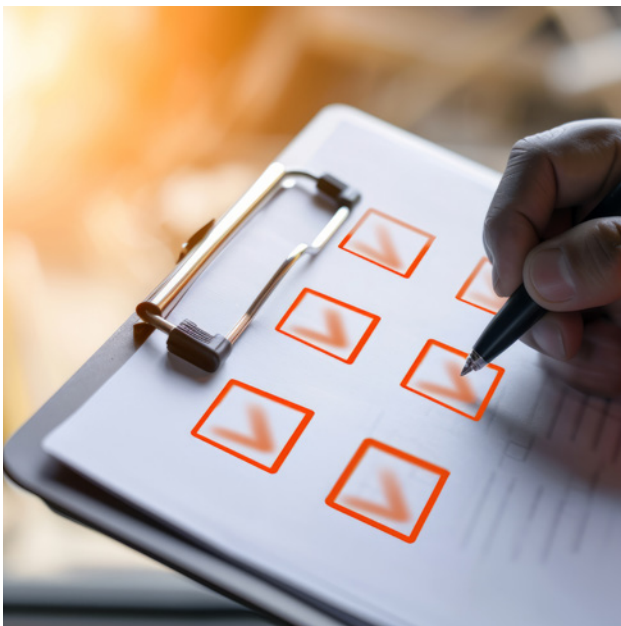
- clean areas that are not visibly mouldy by HEPA vacuuming;
- clean the remaining parts of the house as required;
- clean up work areas and leave the site ready for reconstruction; and
- provide a checklist of what has been done.

Renovation contractors

Renovation contractors are involved in the renovation of houses after a mould cleanup. They may also clean up mould if trained to do so. When hired to clean up mould, renovation contractors should:

- provide a detailed description of the work, cost estimates and a contract for the renovation work to correct problems with the house and to restore the house after a mould cleanup; and
- renovate the house to the specifications provided in the contract.

Mould cleanup contractors should provide a checklist of the work that has been done



Renovation contractors solve moisture problems and restore houses



Assessing a suspected mould problem

- A trained and knowledgeable individual reviews the mould problem and the condition of the house.
- Mould problems can be **small, medium** or **large**—each requiring a different approach.



The Mould Assessment Summary of the *Household Investigation Tool for Mould* on page 65 can be used to help identify the location and extent of a mould problem in a house. Combined with completed checklists from other houses, it can also help to document the extent of the mould problem in the community over time.

Upon completing the *Mould Assessment Summary*, if many small mould patches or one or more medium or large areas of mould are found, the next step should be a complete building investigation by a trained and qualified individual in your community. The Household Investigation Tool for Mould on page 34 is intended to guide such investigations.

Detecting mould

In addition to visual and odour checks described in the *Occupants' Manual*, there are a few quick checks that can also be carried out to help detect mould.

Bleach test

Dab a drop of household bleach onto a suspected mould spot. If the spot loses its colour or disappears within two hours then it may be mould. If there is no change, it probably isn't mould.

Paper swipe test

With a small strip of rough paper (a coffee filter works well), gently rub the surface of the suspected patch of mould. If powder rubs off onto the paper, it may be mould. This test works especially well with dark-coloured mould. Beware that soot from candles or other combustion sources is also dark and will also rub off on paper.

Flashlight test

In a darkened room, hold a flashlight against the surface suspected of being mouldy and shine the beam across the surface from the side. Areas where mould is growing may show up as a shadow and appear as fine fuzz. This test works well with light-coloured mould that may not be easily seen in daylight.

Efflorescence

A common sign of moisture problems affecting foundation walls is the formation of fuzzy white spots on the surface of poured concrete and masonry. This fuzzy growth is called efflorescence. It is made up of delicate crystals of salts that form when moisture with high salt content moves through the concrete or masonry. If this has been happening over a long period of time, the salt will build up and can be several centimetres thick. You can test to see if it is mineral salt by mixing it with a few drops of household vinegar to see if it bubbles or dissolves. If this happens, it is salt deposits and not mould.

Efflorescence on foundation wall is not mould



Estimating the extent of mould

Use the images below to estimate if the area of mould is **small**, **medium** or **large**.

The mould area is **small** if there are one, two or three patches of mould and each patch is smaller than one square metre (1 m x 1 m). Mould on window sills are usually small areas.

! ATTENTION

Small mouldy areas in houses can become bigger if ignored, so it is important to clean up even tiny patches of mould.

Many small patches of mould in one area or throughout the house are a sign of moisture problems that need to be investigated and corrected right away. However, in most cases, small areas of mould can be cleaned up by occupants or housing maintenance staff using proper precautions. See “[Cleaning up a small mould problem](#)” on page 26.

The mould area is considered **medium** if there are more than three patches of mould (each smaller than one square metre) but the total mould area is less than three square metres (for example, 1 m x 3 m or about the size of a 4 ft. x 8 ft. sheet of plywood). Patches close together are considered as one patch.

Example of small mould area



! ATTENTION

In many cases, professional help is needed to take care of medium amounts of mould but occupants may be able to attempt the cleanup with training and proper precautions.

The mould area is **large** if a single patch of mould is larger than three square metres (for example, 1 m x 3 m or a standard piece of 4 ft. x 8 ft. plywood) or if there are many medium or large patches of mould all through the house.

! ATTENTION

Large mould areas should be left to contractors who are trained to deal with mould cleanup.

The [Mould Assessment Summary](#) of the *Household Investigation Tool for Mould* on page 65 can be used to record the extent of the mould found in a house. For each room, the investigator records if the mould problem is **small**, **medium** or **large** by putting a checkmark in the appropriate column. The location of the mould and any other comments are also recorded. Upon completion of the inspection, the extent of the mould problem will become apparent based on the number of “Small,” “Medium” or “Large” mould problems found.

Examples of medium mould areas



Examples of large mould areas



Mould testing and sampling

Testing for mould in houses is usually not necessary. Mould must be cleaned up no matter what type is present. Current methods for testing and sampling for mould in homes can not be used to relate the results to health.

Why is testing usually not recommended?

The first thing that comes to many people's minds when they suspect a mould problem is to have the air in the house tested. This means collecting an air sample and sending it to a laboratory for analysis.

Testing for mould is usually not necessary and should not be the first step. You don't need to know what kind of mould is growing before making a plan to remove it. Air sampling alone provides no information about the extent of the mould problem, why it exists, health risks, or how to fix the problem. Decisions cannot be made based on laboratory results alone.

A complete investigation of the home done by a qualified and knowledgeable individual can be more helpful than testing the air. In most cases, a complete investigation of the home can provide the housing provider and occupants with the information needed to understand why mould is growing in the house and what to do to take care of the problem.

Mould testing is also time-consuming and the wait for test results can delay cleanup and lead to increased exposure of the occupants. For these reasons, the time and resources allocated for mould testing may be better spent on diagnosing and solving the mould problem.

Is testing useful?

In some cases, and if properly done by an accredited laboratory, testing for mould might be useful to help detect hidden contamination. The types of mould are identified, and how much there is in the samples submitted may also be noted. However, it is very rare for mould or signs of water damage not to be detected after a home investigation by a qualified individual.

How is testing done?

Air samples or samples of mouldy materials are sent to a laboratory for analysis. Typically, many samples have to be taken. Testing may have to be done at different times (seasons) to properly assess the situation. The samples are typically sent to a laboratory within 24 hours. The results may take several weeks to come back.

The solution is the same for all types of mould and for any area affected: if mould is obvious, it must be removed, the area cleaned properly, and the moisture problem that caused mould needs to be fixed. No agency has suggested a “safe level” of indoor mould.

If testing is done, who collects the samples?

Trained technical service providers, environmental health officers or community health nurses/representatives may collect dust samples, scrapings of mouldy material and air samples. Mould samples can be sent to laboratories accredited for mould analysis.

How are mould sampling methods chosen?

Trained technical service providers, environmental health officers and other health professionals can select the sampling method using the guidelines in the American Industrial Hygiene Association's (AIHA) publication entitled *Field Guide for the Determination of Biological Contaminants in Environmental Samples*. The laboratory that performs the analysis can also make suggestions on sampling methods.

Mould testing is not usually recommended—resources may be better spent fixing the problem



Identifying the causes of moisture and mould problems

- A thorough house investigation, inside and out, will help identify areas that are wet or damp, those that show signs of mould and those that smell earthy or musty.
- Identify moisture problems—this is a critical step toward understanding mould problems and finding practical solutions.
- Use these practical solutions to correct existing moisture and mould problems.



The importance of humidity

Warm air can hold more moisture than cool air. When warm, moisture-filled air comes into contact with a cooler surface, the air itself cools. If the air cools enough, it can't retain the same amount of moisture, and the excess moisture collects on the surface as tiny droplets of liquid water called condensation.

Here are three common situations where excess moisture in the air leads to moisture problems and mould growth indoors:

- Condensation forms on the interior side of poorly-insulated exterior walls or windows during the winter. Moulds can grow on damp painted or papered wall surfaces, as well as wooden window sills. (Winter problem.)

- Uninsulated cold water pipes drip condensation, causing local moisture damage. This happens most often along the incoming water line in the basement. Items beneath these drips may get wet and grow mould. (Summer problem.)
- Fabric, paper, cardboard and leather, have a tendency to absorb airborne moisture. When stored in humid conditions, such as in a damp basement, these items can become mouldy. (Basement or garage problem.)

Water pipe condensation and plumbing leaks can lead to mould



Papers and clutter can absorb moisture and grow mould



Measure the relative humidity in all the homes that you inspect. To do this you will need a relative-humidity meter, also known as a hygrometer. Ideally, the indoor relative humidity during the heating season should be low enough to prevent condensation on windows.

Indoor relative humidity should be between 30% and 50%. When it is below -10 °C (14 °F) outside, the relative humidity inside should be 30% but it may have to be as low as 25% in extremely cold regions, to prevent condensation on cold surfaces such as windows.

High indoor humidity can be the result of many factors including:

- many people living in one home
- firewood stored indoors
- hanging clothes to dry indoors
- cooking
- lack of kitchen range hood and bathroom fans
- large number of plants in the home
- water leaks
- damp foundation

Indoor humidity should be low enough to prevent condensation on windows



Cold surfaces, in combination with high humidity, may experience condensation that can lead to moisture damage and mould growth. Cold surfaces may be due to:

- missing or inadequate insulation in walls and attics
- inefficient, older windows
- thermal bridges (such as structural framing)
- drafts
- wind washing of attic insulation at the eaves
- inadequate heating (blocked heating ducts, covered baseboard heaters, deactivated space heaters)
- cold water pipes

Moisture damage: what to look for

Although moulds require moisture to grow, they do not need much. An investigation will have to consider all degrees of moisture damage, ranging from soaking wet to slightly damp. Materials that are wet are easy to spot. More problematic are those areas that look and feel dry but were wet and mouldy in the past, and those that are only slightly damp but may become a problem. The techniques below can help to detect these less obvious problems.

Water, as described above, is frequently the cause of indoor mould growth. Gravity affects the movement of water: the lowest part of any material subject to a leak is likely to be the wettest, which is especially true for the framing members and insulation located in walls and attics.

- If you locate a leak, carefully trace the routes that the water has travelled to determine the possible extent of the water damage and where the water might be coming from.
- Floor drains in basements are intentionally installed at the lowest points in the floor. Look around the drain for tiny dried riverbeds left over from previous leaks or flooding.
- Dry drip marks may remain after condensed moisture has dripped down the interior side of cold exterior walls in winter and may indicate thermal bridges, missing insulation and air leakage points.
- Dark staining is the most common feature associated with water damage. It is most often seen on wood and paper products that have become wet. This sort of staining is more obvious on fibres, such as wood, cardboard and ceiling tiles.
- Items that appear darker than they should be may be damp even though they may not feel so to the touch.

- Moisture-damaged materials such as drywall or ceiling tiles can become soft to the touch.
- Rusted metal fasteners and other hardware may indicate a moisture problem in the area.
- Dripping cold water pipes (or white deposits on the underside of pipes) may indicate high humidity levels.
- Damaged finishes around windows and doors may indicate water leakage between the wall and window or door.
- Blisters, or air pockets, in painted or wallpapered surfaces may indicate high moisture conditions in the wall.
- Efflorescence on basement walls may indicate a damp foundation due to wet soil conditions.
- Loose or lifting floor tiles and raised joints in laminate flooring may indicate moisture problems in the floor below, an adjacent wall area or the ceiling above.

The checklist in the *Occupants' Manual* can be used to help identify moisture and mould problems. Further guidance on finding and diagnosing moisture and mould problems is provided below. The process starts with an assessment of the exterior elements of the property including the site, roof, walls, windows, doors and foundation. Next, the interior elements including the attic, ceilings, walls, windows, doors, floors, foundation, heating and ventilation systems and occupant-related factors are considered. The [Household Investigation Tool for Mould](#) on page 34 can be used to record your observations.

Stains on materials often indicate water damage



Exterior

- Check site for standing water and the grading around the house. Grading sloped towards the house can cause water to accumulate next to the foundation.
- Check the condition of the roof for any places where water might enter.
- Inspect for ice damming in the winter. Ice dams form when heat from the house warms the roof enough to melt snow. The water then runs off, only to freeze when it reaches the cooler part of the roof out beyond the walls of the house. Eventually, a layer of ice forms and melting snow is trapped between the ice and the roof and the water can leak into the attic, and from there, into the house. Walls and ceilings below ice dam areas are prone to mould growth. This needs to be inspected and repaired.
- Inspect shingles. Asphalt shingles on a pitched roof should lie flat. Missing, worn, lifting or curling shingles should be replaced.
- On flat roofs, look for cracking, blistering, open seams or uneven surfaces. Water pooling on a flat roof should be fixed to prevent it from draining into the house.
- Inspect chimney for spots water could enter.
- Inspect eavestroughs, downspouts (which should extend at least 3 m or 10 ft. from any wall) for blockages, disconnections or missing sections.
- Make sure grading is sloped to direct water away from the house. This includes lawns, gardens, driveways and walkways around the house.
- Check that all window wells are well drained and basement windows are in good condition.
- Inspect cladding (wood, vinyl siding, metal siding, masonry, stucco) for signs of cracking, surface wear, loose or cracked caulking. Repair any damage found to keep water out.
- Inspect windows closely. Check to make sure the caulking seal around the windows is solid and has no gaps or cracks. Check for any signs of staining that might indicate water is seeping in.
- Check for leakage between the frame joints or through joints between the sashes and the frames.

Clear eavestroughs of debris such as leaves



These kinds of leaks can cause wetting that is usually worse on the wall and floor right below the window. Check the weatherstripping. Also, check to make sure windows close properly. Air leaks around windows can cause condensation, moisture damage and mould growth. Repair as necessary.

- Inspect wooden window sills for mould growth appearing as powdery black, brown or reddish stains on painted or unpainted sill surfaces.

Basements and crawl spaces

Basement walls

- Inspect interior sides of basement walls (including cold cellars) for signs of mould, moisture and leaks.
- A common sign of moisture problems affecting foundation walls is the formation of efflorescence (see page 10).
- Check that any insulation on the basement walls is covered and sealed with air/vapour barriers on the basement walls and between floor joists.
- Check for signs of rotting wood.

Rotting wood at the base of a finished basement wall



Cold cellars

- The right conditions for storing food (cool and damp) are also the right conditions for mould growth. It is not a good idea to keep an indoor cold cellar unless it can be isolated from the rest of the house and has an outdoor entrance.
- A cold cellar that is very mouldy can be a source of mould for the whole house.

Basement floors

- Check for carpets or vinyl flooring on basement floors. They may have to be removed if wet or damp. Moisture can come up through the concrete slab or airborne moisture can accumulate on the cool concrete and make the carpets and underpads damp and mould can grow.
- Check under raised floors, since the cavities created under these floors are good hiding places for mould.
- Inspect the floor for cracks.
- Watch for signs of flooding, such as staining of the walls and floors or “dry riverbeds” that meet at the lowest point on the floor (usually the drain).
- Note any insects such as pill bugs or sow bugs (which look like tiny armadillos). These can indicate moisture problems.

Bathrooms

- Check that the bathroom fans are operating. The fan should create airflow strong enough to hold a sheet of tissue paper to the grille when operating. Check the duct, dampers and outside vent hood for blockages if the airflow is weak.
- Inspect plumbing under the bathroom sink and toilet for signs of leakage or condensation. Inspect the condition of the cabinetry under the sink for signs of moisture damage.
- Inspect toilet tanks for condensation in the summer. Consider replacing the toilet if it is not insulated on the inside and condensation is a problem. A leaking flapper valve, which causes the tank to keep filling with cold water may also cause condensation. To check, add a few drops of food colouring to the water inside the toilet tank. Wait 30 minutes. If the water in the toilet bowl changes colour, the flapper valve inside the tank may be leaking and should be replaced with a new flapper made for the toilet model.
- Inspect the caulking around the bathtub and shower stalls. Small gaps or cracks can cause leakage when the tub or shower are used. Look around the sides of the tub and on the floor for any signs of leaking and water damage.
- Note any insects such as silverfish, centipedes, springtails and pill bugs. These all indicate moisture problems.
- Check the condition of painted ceilings and walls. Cracked or peeling paint may indicate that there is too much moisture in the air, leaks in the walls or roof or too little insulation.

Insects such as pill bugs and silverfishes indicate moisture problems



Inspect plumbing under the sink and behind the toilet for signs of leakage



Kitchens

- Make sure the range hood is vented outside and is working.
- Check the condition of the outside vent hood to make sure the flapper works easily and does not let in rainwater.
- Inspect the plumbing for the kitchen sink and any other appliances for signs of leakage or condensation and for signs of water damage.

Laundry areas

- Make sure dryers are vented directly outside with short, straight runs of aluminum duct with sealed joints.
- Check the duct for lint build-up—this is a fire hazard, prevents effective moisture venting and can cause the dryer to operate longer than necessary, wasting energy.
- Inspect the plumbing for the clothes washer and check for leaks. Burst hoses can cause a great deal of water damage. Make sure the washer drains properly to the laundry tub or a drain pipe without leaking or spilling. Check under and behind the washer for signs of moisture and water damage.
- Check the laundry tub faucet—dripping will wet the bottom of the laundry tub, adding to humidity problems.
- Check laundry sink plumbing for signs of leakage.

Dripping faucets add to humidity problems



Water staining and mould growth on ceiling tiles



All living areas

- Check condition and cleanliness of carpets.
- Inspect ceilings and walls for any signs of water staining or discolouration. Water damage to the ceiling usually happens as a result of a plumbing leak or a roof leak. Mould growth from condensation can also happen on the ceiling in places where the attic insulation is poor, causing the ceiling to be too cold in the winter.
- Look for water staining or mould growth on exterior walls. It is usually worse in areas where the air is cold or not flowing well and where wall insulation lacks, such as in corners near the ceiling or baseboard. Furnishings can also reduce air circulation against the wall. Check walls behind hanging pictures, large pieces of furniture or curtains for signs of condensation, moisture damage and mould. Use a flashlight at an angle to look for small patches of mould and light-coloured mould.

- Check for water leaking through the wall beside and beneath windows. Gently push on the wall to feel for soft spots that may indicate moisture problems.
- Lift carpets at the edges where they meet the walls and look underneath. Staining on walls, subfloors or the underside of carpets could indicate water leaks.
- Check for cold walls and poor air circulation in closets—they can result in condensation, moisture damage and mould growth.

Attics

- Shine your flashlight on the underside of the roof. Look for stains that may indicate water leaks. Check closely where the roof bends or changes direction, since leaks commonly occur in these locations.
- Make sure the attic roof insulation is over R-31 as lower R values may allow too much heat to escape from the house to the attic which contributes to ice damming. The insulating properties vary from material to material, but glass fibre insulation should be about 9 in. (220 mm) thick to provide R-31 insulation value.
- Check for a musty smell in the attic, which can indicate dampness. Air leakage into the attic from the house can cause condensation on cool surfaces in the attic during winter causing mould growth. It can also contribute to ice damming. Air leaks from the house should be sealed.
- An ammonia-like smell in the attic may indicate the presence of animals. Pigeons and bats can be very hazardous when they roost in attics and the fungi that live in their droppings can cause infectious diseases in people. If you find birds or bats roosting in the attic, get professional help to remove them and to clean up the area.

Black discolouration of carpeting near baseboards can be a sign of a mould problem



Discoloration and staining on the underside of the roof indicates a water leak



Increase airflow in rooms with no air return grilles by undercutting the door by one inch



Mechanical systems

Forced-air heating systems

- Check that the furnace has been serviced. Annual maintenance service is recommended.
- Check the condition of any furnace humidifiers. Poorly-maintained humidifiers increase humidity levels and can cause mould growth. Standing water in the humidifier and leakage in the plumbing can be a source of moisture problems.
- Make sure any forced-air system can circulate air freely throughout the house. Undercut room doors so air can circulate back to central returns, if required. Continuous fan operation can help circulate air throughout the house.
- Clean and replace furnace filters regularly to ensure good airflow through the furnace.
- Make sure sufficient heat is provided to the basement to reduce cold spots and the risk of condensation.
- If mould problems are discovered in the basement, immediately seal the ducts and grilles in the basement to prevent air from being drawn from the basement and circulated into the rest of the house. This is only a temporary measure. In the winter, provide the basement with an alternate heat source until the mould problem is solved.
- Remove floor registers and inspect for dust build-up using a flashlight and mirror to take a look inside. Vacuum the registers and the return duct regularly. Arrange for professional duct cleaning if the dust accumulated inside the ducts is excessive.

Water heaters

- Check the water heater and the pipes attached to it for leaks or signs of condensation.
- Check the water heater drain and pressure relief valve for leaks.
- Check pipes for insulation to prevent heat loss from hot water pipes and condensation on cold water pipes.

Heat recovery ventilators (HRVs) or air exchangers

- Check outside hoods to make sure they are clean. Check filters inside the unit and clean as necessary. For HRVs, remove the heat exchange core and check for cleanliness and blockages.
- Inspect condensate drain pans in HRVs for proper drainage and cleanliness. Check that the condensate line from the HRV is clean, free-draining and properly connected to a drainage point.
- Ensure controls are operating. Check the controls on the unit and any remote controls provided in bathrooms or in another central location.
- Check for strong airflows from the supply air grilles and at the exhaust air grilles.
- Check for the last service date and compare with manufacturer's recommendations.
- If the HRV or air exchanger is connected to a forced-air system, make sure the furnace fan is set to run continuously to keep air circulating throughout the house.

Solving the moisture problem

- Once the moisture problem is identified and the causes determined, it's important to fix the problem before cleaning up the mould.
- Sometimes, moisture problems can be complex to diagnose and solve—trained expertise may be required.



Having identified the moisture problem and its causes, measures can be put in place to stop or control the moisture source. The measures may be temporary if there is a need to renovate the home as a result of the mould damage and cleanup activities.

Sometimes solving the moisture problem is complex, such as in the case of excavating a foundation to install damp or waterproofing, new drainage tile, insulation, free-draining backfill and properly sloped surface grading. In such cases, the work to fix the moisture problem may have to be done at the same time as the cleanup work. However, there is little point in completing a cleanup before the moisture problem has been solved as the mould problems will likely come back soon after the cleanup has been completed.

General approaches to solving moisture problems include:

- Ensuring water drains away from the foundation and that there are no low areas next to the foundation walls.
- Fixing water leaks in roofs, walls, windows and foundations.
- Supplying bathroom fans, an exterior vented kitchen range hood or a heat recovery ventilator to help control indoor humidity levels.
- Fixing leaks and dealing with condensation on pipes and plumbing fixtures.
- Fixing problems around bathtubs and shower enclosures.
- Fixing damp foundations and crawl spaces.
- Ensuring space heating systems maintain adequate temperatures and air circulation throughout the house.

Use downspout extensions or a splash block to drain water away from foundations



Fixing damp foundations and crawl spaces can be complex and often requires trained experts



Getting the house ready for cleanup

- Once the moisture problem has been identified and fixed, the house is ready for cleanup.
- A plan is needed to guide every cleanup to help ensure it is done properly.
- Prepare the work area according to the size of the cleanup.
- Protect occupants and workers from exposure to mould, dust and debris during cleanup.



Once the moisture problems have been addressed, it is time to plan the cleanup. Proper preparation is required to ensure the job is done properly with as little risk and disruption for the occupants as possible. For **small** mould problems, the preparation tasks include determining whether or not the occupants will clean up the mould, educating the occupants on mould cleanup and measures to protect themselves and their families and ensuring they have the right materials to get the job done. For **medium** mould problems, determine if the occupants can clean up the mould effectively and safely. With the right knowledge and tools, some occupants may be able to handle the work. Often, trained maintenance personnel or other trained individuals deal with **medium** mould problems. **Large** mould problem may require a contractor who specializes in mould cleanup.

After the cleanup, a separate contractor may be needed to renovate and restore the house, deal with the moisture problems, and make it more mould-resistant.

Agreements must be prepared for both the cleanup contractor and the renovator that include clear descriptions of the work to be done, the costs and the schedule. Go over the plan with the contractors, their experience can be valuable.

An independent contractor or inspector, trained in mould remediation, may also be hired to confirm the plan of action, perform quality assurance inspections and advise on the remediation and renovation work as it proceeds.

Agreements with contractors must include work specifications



Site and team preparation

Depending on the size of the area covered by mould, preparation is needed to make sure that work is done correctly, on time and on schedule, with as little disruption to the occupants as possible.

Preparation may include the following steps:

- Arranging a meeting with the environmental health officer, community health nurse/representative, occupants and contractor to review everyone's roles and responsibilities during the mould cleanup.
- Reviewing with contractors the safety requirements for workers and occupants including making arrangements to isolate the work area to protect occupants, as described in the next section.
- Making sure that the cost estimate and method for dealing with unforeseen work (work not covered by the estimate and contract) is current, covers all work required and is provided in writing.
- Reviewing the work to be done with the contractor, workers, technical service provider and community health nurse/representative or environmental health officer.
- Organizing the disposal (dumpster, disposal permits, etc.) of the mouldy waste and other waste materials through the closest exit.
- Informing occupants of the cleanup and renovation work to be done, the expected schedule and anything else that they may have to do to help get the project completed as quickly and safely as possible.

Arrange meetings with team members to discuss the work plan



Isolate the work area to protect the occupants



Occupant protection during cleanup and renovation

Depending on the situation, the occupants may have been exposed to the mould in their house for a long time. They may be experiencing health effects by the time the mould problem is recognized. During cleanup and renovation, the amount of mould, dust and debris in the air may increase and cause further problems.

Consider the following when making decisions on the continued occupancy of the house during the cleanup and renovation:

- the size of the cleanup;
- the level of disruption;
- whether or not it is possible to isolate the area to be cleaned from the rest of the house; and
- the health of the occupants.

If the area to be cleaned is large and cannot be isolated from the rest of the house, it may be necessary to relocate the occupants during the cleanup and renovation work.

Who is at higher risk from mould?

Certain individuals may be at higher risk to mould exposure. Health Canada advises that the following people should not carry out any of the cleanup activities or be in or near the work area:

- people with breathing difficulties (asthma, tuberculosis or other respiratory disease);
- people with a mould allergy or chemical sensitivities;
- people with any sort of immune suppression or immunocompromised condition (HIV, chemotherapy, transplant, taking certain medications, etc.);
- people with any virus or bacterial infection (bronchitis, pneumonia, severe cold or flu). They should wait at least three days after they are well before working in mouldy areas;
- pregnant women;
- infants;
- children; and
- the elderly.

Contact your environmental health officer or your community health nurse/representative for further information and guidance if higher-risk people live in a house that will undergo mould cleanup and renovation activities.

Occupants may have to be relocated if the mould area is large and can't be isolated



Occupants at higher risk should stay away from areas close to mould cleanup activities



Occupants protection measures

If people live in the house during the cleanup, they must be protected by isolating the work area from the rest of the living space.

Steps typically taken to isolate the cleanup area and to minimize occupant disruption include:

- Sealing off the area using plastic sheeting taped to walls, ceiling or floor.
- Closing and taping doors to non-work areas. Draping plastic sheeting and tape across doorways without doors.
- Shutting off the fan/blower on forced-air furnaces. Sealing all duct openings to keep renovation/cleanup dust from getting into the duct system and to avoid the air in the work area from escaping into the rest of the house.
- Installing an exhaust fan in a window of the room being cleaned to provide ventilation and help prevent contamination of other areas of the house.
- Making sure the work is done as quickly and carefully as possible.
- Designating a worker access entrance to the work area.
- Providing drop cloths to protect floors between the work area and the selected worker access entrance.
- Cleaning up the work area at the end of the day.
- Storing all materials and tools safely.
- Disposing of waste and contaminated material right away.
- Having the work area professionally cleaned once the cleanup and renovation are completed.

Seal off the area using plastic sheeting taped to walls, ceiling and flooring



Worker protection measures

Contractors must put into practice worker protection measures as required by provincial/federal regulations. Contact the provincial ministry of labour for information on occupational health and safety for mould cleanups.

All workers should be familiar with their personal protective equipment, its repair, maintenance and cleaning requirements and the hazards associated with handling mould-contaminated materials.

Minimum worker (or occupant) personal protective equipment (PPE)

For *small* mould area cleanups:

- Safety glasses or goggles.
- A mask (if possible an N95 respirator or equivalent; this type of mask traps small particles like mould better than a regular dust mask).
- Household rubber gloves.

For *medium* mould area cleanups:

- Half-face respirator with charcoal cartridges. A good fit is necessary to provide proper protection.
- Safety goggles or glasses.
- Disposable gloves (latex or nitrile) covered with a second pair of standard work gloves for heavy work.

For *large* mould area cleanups:

- Full-face respirator with disposable filters. A good fit is necessary to provide proper protection.
- Disposable gloves (latex or nitrile) covered with a second pair of standard work gloves for heavy work.
- Disposable coveralls (covering head and shoes).

To minimize exposure to mould, dust and debris, only the cleanup crew should be in the work area.

Do's and don'ts for workers

Do encourage workers to:

- remove mould-contaminated clothing and wash hands before eating;
- wash or dispose of gloves when finished working for the day;
- store masks in clean plastic bags; and
- wash work clothes separately and shower at the end of the working day (to prevent exposing their family members to the mould).

Workers should not:

- assume that mould will not affect them;
- eat in a mouldy area; and
- touch their face or skin with their working gloves.

Make sure occupants have the proper protective equipment



Minimum PPE for a medium mould area cleanup



These workers are wearing proper PPE for large mould area cleanups



Cleaning up a small mould problem

- Occupants can usually be trained to clean up small mould problems using the information in the *Occupants' Manual*.
- Continue to monitor the house after the work has been done to make sure the problem has been fixed.



Small mould problems can become larger, more serious problems if not dealt with quickly and thoroughly. For small mould problems, the occupants are generally capable of dealing with the problem themselves.

As with any mould problem, it is important to understand the moisture problem that is causing the mould to grow and to educate the occupants on how to control indoor moisture conditions. The information contained in the *Occupants' Manual* publication can help housing providers to provide occupants with the information they need to know.

It is important to monitor the home after the cleanup has been completed to ensure the mould problem does not come back.

You can clean a small mould area with a mild unscented dishwashing detergent



Cleaning up a medium mould problem

- Cleanup and safety procedures depend on the area covered by mould, where it is located and extent of the damage.
- HEPA vacuuming the house can help reduce exposure to mould before, during and after renovation.
- A mould problem may spread to the rest of the house during the cleanup if not done properly and if conditions are right for mould growth.
- Clean mouldy furniture, clothes and possessions thoroughly and properly before they are returned to a cleaned-up house or moved to another house.
- Continue to monitor the house after the work has been done to make sure the problem has been fixed.



Medium mould cleanups often require the participation trained maintenance staff. However, sometimes the occupants may want to deal with the cleanup themselves. In such cases, advise the occupants to follow the recommendations on how to deal with medium mould problems in the *Occupants' Manual*.

Make sure they have the proper protective equipment. For a medium mould problem, the basic steps include:

- Stopping and correcting sources of moisture and leaks.
- Taking the steps necessary to prevent occupant exposure to mould and cleanup debris.
- Removing all wet or damaged materials from the work area.
- Deciding what can and cannot be salvaged.
- Cleaning up mould on surfaces as described below.
- Restoring or renovating the work area.

Furniture

- Vacuum furniture with a HEPA or externally-exhausted vacuum first. Vacuuming before cleaning mould-contaminated surfaces can reduce exposure to mould.

ATTENTION

Ordinary vacuum cleaners must not be used for mould cleanup as they can cause small particles and mould spores to become re-suspended in the air.

- Furniture that has hard, washable surfaces can be scrubbed with unscented dishwashing detergent mixed with warm water. Sponge it with a clean, damp rag and dry it quickly.
- Surfaces that are likely to be damaged by water may be cleaned with baking soda. Do a patch test first on a hidden surface to make sure the material, surface or finish won't become discoloured (stained) or affected.
- Add just enough water to baking soda to make a paste. Apply the paste to the surface to be cleaned and leave it on for half an hour or longer. Wipe off or vacuum using a HEPA or externally-exhausted vacuum. Repeat as necessary. Air the item out in the sun.

Start by vacuuming furniture with a HEPA or externally vented vacuum



Carpets

- Carpets should be pulled away from walls that are wet.
- Carpets can be cleaned by vacuuming with a HEPA or externally-exhausted vacuum cleaner.
- Carpets and underpads that are mouldy should be thrown out. Mould in carpets can stay hidden. Water stains on carpets usually means that there is a mould problem. Any carpet that has been wet for longer than 48 hours should be thrown away since it probably contains mould.
- Moist or damp carpets that have a musty odour should be removed. Carpets that are not damp but have a musty odour may be liberally sprinkled with plenty of baking soda and left overnight. Vacuum well with a HEPA or externally-exhausted vacuum. If after cleaning there is still a musty smell, the carpet may have to be discarded.
- Very old carpets may have to be discarded no matter what their condition is because they often accumulate dust that may contain mould spores.
- After the carpeting and underpad have been removed, a HEPA or externally-exhausted vacuum can be used to clean the floor.
- Area rugs may be removed and professionally cleaned.

To reduce the amount of mould in the air when removing mouldy carpeting, work slowly and carefully to avoid stirring up dust. Roll up the carpet for disposal if possible.

Wet carpets and underpads must be dried immediately. Replace them if they have been wet for more than 48 hours.



Proper vacuuming technique

Vacuuming can help reduce exposure to mould but it must be done properly and carefully as follows:

- The vacuum is first pushed forward across the object or area being vacuumed and then is slightly lifted and pulled back across the area being vacuumed to trap dust in the air immediately above the carpet.
- All areas are vacuumed in four directions if possible but at least in two directions at right angles to each other.
- Each square metre of the object or area should be vacuumed for at least two minutes. This is much more than for normal vacuuming.
- “Beater” heads should not be used unless they are designed to prevent the vacuum from stirring up dust in the room.

Wood

Wood that is visibly rotting should be thrown away and replaced. Framing and other wood surfaces that only have surface mould can be cleaned, but the wood should be dried first.

- Loose mould can be vacuumed from the wood surface using a HEPA or externally-exhausted vacuum cleaner.
- The surface of the wood may be cleaned with unscented detergent and water. Rinse with a clean damp rag and dry quickly. The drying process can be sped up with fans and open windows (if the relative humidity outside is low), or with dehumidifiers (keep windows and doors closed). Do not allow the wood to be wet for more than a day. Measure the relative humidity of the air next to the framing. The conditions are typically dry enough for painting or refinishing when the wood is dry and the relative humidity of the air is less than 60%.
- If the mould stains do not come off by cleaning, the surface of the wood can be sanded and vacuumed with a vacuum/sander combination until all signs of mould disappear. It is important to use a HEPA or central vacuum while sanding to prevent mould spores from being released into the air. Sanding is only effective for mould on the surface of the wood. Wood that is rotten should be replaced.

Drywall (gypsum wallboard)

Mould on the painted surface of drywall can be cleaned with unscented detergent. If the mould has gone below the surface of the paint, into the drywall, the mouldy patch of drywall should be cut out and replaced as follows:

- Cover the mouldy area with a piece of 0.15-mm (6-mil) polyethylene (poly) plastic large enough to overlap the area by at least 200 mm (8 in.)
- Seal and secure the edges of the poly with sheathing or duct tape.
- Disconnect the power to any electrical circuits close to the work area before cutting away the drywall.
- Use a utility knife to cut around the border of the taped area and to remove the material. A utility knife is better at cutting drywall than a saw and it is easier to control and creates much less dust. Make sure that the blade is new and set the depth of the cut to the thickness of the drywall, usually half an inch. Cut in several passes, slowly and with even pressure. If you try to cut through the entire thickness all at once or too quickly, you risk slipping and hurting yourself. Once you have cut through the drywall thickness, gently remove the section using a pry-bar (installing new drywall will be easier if the section you cut out spans at least two stud or joist surfaces).
- Double bag the mouldy material in heavy-duty garbage bags or wrapped in 0.15-mm (6-mil) poly (plastic) with taped joints. The amount of material in each bag should be limited so they are easy to lift and do not rip when lifted. The bags should be placed immediately in a dumpster or other waste container until they can be taken to a landfill site.
- Wash the surrounding area with an unscented detergent solution and dry quickly.

- The cavity area behind the cutout should be inspected. If there is mould inside the wall cavity, more work is needed. Mouldy insulation may need to be removed, the wood framing may need to be cleaned and more drywall may need to be removed. New drywall and framing eventually will become mouldy if mould in the cavity is not dealt with and the source of moisture is not stopped. Delay the installation of new materials until the source of the moisture is corrected and the framing is dry. If the work is not done right away, the cutout area should be sealed with poly (plastic) and the edges sealed with tape to prevent mould from escaping into the room.

ATTENTION

Always replace wet insulation. Even though mould does not grow well on insulation materials like fiberglass and cellulose (unless these materials remain soaking wet for several days or weeks), always replace wet insulation. Wet insulation can wet the wood structure, drywall, exterior sheathing and lead to mould problems.

Temporarily cover small mould areas with plastic and seal the edges



Concrete

- Concrete surfaces can be vacuumed using a HEPA vacuum or externally-exhausted vacuum cleaner.
- Concrete surfaces can be cleaned up using unscented detergent and water (as described above for cleaning furniture) and dry quickly.
- If the surfaces still look mouldy after cleaning:
 - Dissolve one cup of trisodium phosphate (TSP) in 7.5 litres (2 gallons) of warm water. Stir for two minutes. Note: Do not allow TSP to come in contact with skin or eyes—wear protective goggles and rubber gloves.
 - Saturate the mouldy concrete surface with the TSP solution using a sponge or rag. Keep the surface wetted for at least 15 minutes.
 - Rinse the concrete surface twice with clean water.
 - Dry thoroughly and as quickly as possible.

Wash surrounding areas with unscented detergent and dry quickly



Whole-house cleaning

- Because of the way air moves in a house, a mould problem in one area can spread through the house. Even spores from mould growing behind walls or above ceilings can get into the indoor living space through cracks and holes. If conditions are right, mould will start to grow in a new place adding to the overall mould problem. The house should be completely cleaned from top to bottom after the mould cleanup and renovations are done.
- Walls, ceilings and floors can be cleaned with a detergent solution making sure that all work areas are completely dry. A HEPA or externally-vented vacuum can be used as a final cleaning step.
- Heating, ventilating and air-conditioning ducts in a mould-troubled house may contain mould- contaminated dust; all ducts should be cleaned. Professional duct cleaning is a good option.
- Any furnishings or possessions that were removed from the house during the mould cleanup should be cleaned (if possible) or thrown out. Mouldy furniture could bring mould spores back into the newly- cleaned home.

Concrete surfaces can be cleaned with unscented detergent or TSP



Furniture that has been in a mouldy house must be cleaned or thrown out



Cleaning up a large mould problem

- A large area of mould should be handled by a trained and qualified mould remediation contractor.
- HEPA vacuuming can help reduce exposure to mould before, during and after renovation.
- Precautions must be followed to prevent exposure of occupants to mould during cleanup.



Large mould problems are managed much in the same manner as medium mould problems. However, the extent of large mould problems typically requires the services of specialized mould cleanup contractors or well-trained maintenance personnel. To deal with **large** mould problems, make sure proper protective equipment is used and protective measures are put in place to limit the exposure of the occupants to dust and debris.

For a large mould problem:

- Correct the source of moisture as a first step in the mould remediation process. Stop water from leaking into the house and control moisture generated by the occupants.
- Clean the house using a trained contractor.
- If repair or renovation is in only one or two areas of the house, build an enclosure of framing and poly (plastic) sheeting or tarpaulins around the work areas to protect the occupants.
- When the mould area is very large, use exhaust ventilation while working to prevent renovation dust and debris from being scattered throughout the house.
- Cleanup procedures typically follow those outlined for small and medium mould cleanups.
- Store all debris in closed containers prior to disposal.
- Remove all demolition debris as soon as possible.
- Remove construction debris by the end of the job.
- Clean all surfaces that have been marked or soiled, and fix any damaged areas.
- Completely dry the area before refinishing or renovation work begins.

Is it worth fixing the house?

Sometimes damage from mould is so great that you will have to decide whether or not to fix the house. Judge each case individually based on the cleanup and renovation plans and cost estimates.

Examples of houses that may be difficult and expensive to clean up and renovate to get rid of mould are:

- houses with a large amount of visible mould, where mould may be hidden in every cavity which would have to be opened, leaving only the structural shell;
- older houses that have been renovated several times and have many layers of finishes that would be difficult to remove and clean;
- houses with one or more additions resulting in hidden cavities, incomplete drainage systems or poor heating and ventilation that would be difficult and costly to fix.

If the house is not worth renovating, it should be demolished and the materials discarded. The demolition crew, whether tearing down the house manually or with heavy machinery, must wear protective clothing and equipment. Clouds of spores are likely to be released as the structure is demolished. Erect temporary fencing around the site and be sure to notify bystanders and neighbours when the work is being done. During the demolition, make sure the site is not accessible to children or anyone identified with higher risk of health problems as listed in the section “Who is at higher risk for mould?” on page 23.

Dispose of materials or furnishings from a condemned building in such a way that no one can reuse them and contaminate their house.

The replacement house should be built to improved standards that are less likely to result in moisture problems and mould contamination.

Use the cost estimates to decide if a badly-damaged mouldy house is worth renovating



Caring for the home after mould cleanup

- Clean up and safely dispose of construction damage or debris.
- Confirm with the environmental health officer or community health nurse/representative that the house is suitable for occupancy.
- Show the occupants the cleanup and renovation work and how to use and maintain any new materials, finishes and equipment.
- Inform occupants of steps to take to prevent mould growth.
- Prevent moisture problems through good maintenance.



After the mould cleanup and renovations have been completed, the house should be completely cleaned.

The community health nurse/representative or environmental health officer may be consulted to confirm that the house is fit for occupancy. Make sure that moisture problems have been solved and that there is no remaining mould in the house.

Have the renovation contractor or another knowledgeable person explain any new heating or ventilating equipment or other new features of the house to the occupants. Leave printed instructions on maintenance of new or unfamiliar equipment, such as heat recovery ventilators, with the occupants.

Provide the occupants with a copy of the ***Mould in Housing: An Information Kit for First Nations Communities*** and go over the information in it with them. This should help the occupants to recognize and clean up small mould problems.

It is important to help occupants understand their roles and responsibilities with respect to the operation and maintenance of their home and to know when and who to call for help. The occupants should also be advised to watch constantly for any sign of moisture problems and mould growth.

Cleaned and renovated houses should be monitored after the work has been completed to ensure that moisture and mould problems do not return. With enough available moisture, mould problems will return.

Explain to occupants how to use new heating and ventilating equipment



Regular inspections can help prevent mould



Household Investigation Tool for Mould

In some cases where moisture and mould problems are obvious, immediate action can be taken to fix the problems and clean up the mould. In other cases, the nature of the moisture problem and the extent of the mould may not be so clear. Additionally, when a number of houses in the community are affected by mould, there may be a need for a more thorough approach for recording the house characteristics, the condition of the home and the presence of mould so that an effective community-wide remediation strategy can be created.

The following pages provide guidance on how such information might be gathered and recorded in a *Household Investigation Tool for Mould*. Note that filling out the Investigation Tool may not be for everyone. It requires a good knowledge of house construction, heating and ventilating systems, inspection techniques and moisture and mould problems in houses to complete the Investigation Tool correctly and to understand the results. If such skills and knowledge does not exist in the community, consider hiring outside expertise.

The *Household Investigation Tool for Mould* can be used as a part of a broader community self-assessment for mould. The Tool can help communities to better understand the extent and causes of mould problems in each house and across the community. It can help to identify which houses may need attention first and to organize an effective remediation strategy. The Tool can also help housing providers to know and understand what to ask for if it is necessary to hire outside expertise to conduct a household mould investigation.

Date: _____ / _____

1. House Investigator's Information

Last name:	First name:
Title:	Phone: () -
Email:	

2. First Nation Community General Information

Community name:	GPS location: N _____ • _____ W _____ • _____
Annual temperature range:	# of people in the community:
Annual relative humidity range (%):	# of dwellings in the community:

3. Occupant Information

Last name:	First name:			
Address:	Phone: () -			
Email:	Length of occupancy in current dwelling (in years):			
Number of people living in the house (approx. in any given 24 hr. period):				
Type of ownership:	First Nation-owned	Private	Rental	Don't know
Notes:				

4. Building History

Year the house was built (approximately): _____ Don't know

Previous mould problems? Yes No Don't know

Previous mould cleanup and renovations? Yes No Don't know

What year? (approximately): _____ Don't know

Describe the work that was done:

Is there a history of:	Location:			
Flooding?	Yes	No	Don't know	
Rain or snow leaks?	Yes	No	Don't know	
Plumbing leaks?	Yes	No	Don't know	
Condensation on windows?	Yes	No	Don't know	
Moisture problems?	Yes	No	Don't know	

Notes:

5. Building Characteristics

Building type:

For the first three building types, specify layout:

Single detached:	Bungalow (one level)	Two-storey	Split-level	Don't know
Semi-detached:	Bungalow (one level)	Two-storey	Split-level	Don't know
Row house:	Bungalow (one level)	Two-storey	Split-level	Don't know

Mobile home

Apartment unit

Other (specify): _____

Structure type:

Log Wood frame Concrete (for example, concrete block, insulating concrete forms, etc.)

Other (for example, steel frame, structural insulated panel, etc.) Specify: _____

Don't know

House site:

In general, any of the ground around the house slope:

Gradually sloping (select one or both): Away from house Toward house

Steeply sloping (select one or both): Away from house Toward house

Flat Don't know

Flooding outside?	Yes	No	Don't know
Standing water around the house or on property?	Yes	No	Don't know
Is the site well drained?	Yes	No	Don't know
Ground cover around the house:	Earth	Grass	Don't know
	Other (describe): _____		

Proximity to surface water (ocean, lake, river, creek, pond, marsh, etc.) in metres: _____ N/A

Notes:

6. House Exterior

Foundation

Design:	Basement	Crawl space	Slab-on-grade		
Type:	Poured concrete	Concrete block	Preserved wood	Don't know	
	Other (pier, etc.): _____				
Structural Condition:	Good	Fair	Poor	Don't know	
Cracks:	Large	Medium	Small (hairline)	None	Don't know

Notes:

Crawl Space

Is there a crawl space?	Yes	No	Don't know
Vents or openings to the outside:	Yes	No	Don't know
Vents open:	Yes	No	Don't know
Exterior insulation:	Yes	No	Don't know
Condition:	Good	Fair	Poor
Covered or protected:	Yes	No	Don't know
Exterior wall damp proofing:	Yes	No	Don't know

Notes:

For basement and crawl space foundations:

Windows:	Yes	No	Don't know	N/A
Type:	Horizontal slider	Vertical slider	Casement/Hopper	
Condition:	Good	Fair	Poor	Don't know N/A
Window wells:	Yes	No	Don't know	N/A
Condition:	Good	Fair	Poor	Don't know N/A
Well-drained:	Yes	No	Don't know	N/A
Standing water:	Yes	No	Don't know	N/A
Evidence of leakage:	Yes	No	Don't know	N/A
Building services sealed:	Yes	No	Don't know	N/A

Exterior insulation:	Yes	No	Don't know	N/A	
Condition:	Good	Fair	Poor	Don't know	N/A
Covered or protected:	Yes	No	Don't know	N/A	
Foundation wall damp proofing:		Yes	No	Don't know	

Slab-on-grade:

Elevated to avoid flooding:	Yes	No	Don't know	
-----------------------------	-----	----	------------	--

Notes:

Exterior walls

Cladding type:	Wood Brick veneer	Vinyl Stone veneer	Aluminum Other (specify): _____	Stucco
Wall thickness:	2x4	2x6	R10/R20	
Insulated:	Yes	No	Don't know	
Condition:	Good	Fair	Poor	Don't know
Evidence of leakage/moisture problems (stains, peeling paint, etc.):		Yes	No	Don't know

Notes:

Windows

Type:	Horizontal slider	Vertical slider	Casement/Hopper	
Condition:	Good	Fair	Poor	Don't know
Number of panes:	One	Two	Three	
Cracked or broken panes:		Yes	No	Don't know
Frame material:	Wood	Vinyl	Metal clad wood	Metal Other

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Moisture-damaged frames, sills or sashes:	Yes	No	Don't know	
Condition of weather stripping:	Good	Fair	Poor	Don't know
Evidence of water leakage:	Yes	No	Don't know	

Notes:

Doors

Material:	Wood	Metal	Other	
Cracked or broken doors:	Yes	No	Don't know	
Moisture-damaged frames:	Yes	No	Don't know	
Condition of weather stripping:	Good	Fair	Poor	Don't know
Evidence of water leakage:	Yes	No	Don't know	

Notes:

Roof

Attic ventilation:	Gable	Soffit	Roof vents	Ridge vents	N/A
Slope:	Flat	Low	Medium	Steep	
Finish/covering:	Asphalt shingles	Metal	Cedar	Other (specify): _____	
Condition of shingles:	Good	Fair	Poor	Don't know	
Flashing:	Yes	No	Don't know		
Type:	Valley	Ridge	Drip edge		
Eavestroughs:	Yes	No	Don't know		
Condition:	Good	Fair	Poor	Don't know	
Downspouts with extensions:	Yes	No	Don't know		

Notes:

8. Room-by-Room Inventory and Assessment

Basement

	Ceiling	Walls	Floors	Windows/doors
Materials	Drywall Wood Tile Other: _____	Drywall Wood Panelling Other: _____	Unfinished Carpet Wood Composite tile Sheet flooring Other: _____	Wood Metal Vinyl Aluminum Other: _____
	Finished Partially finished Unfinished	Insulated Uninsulated Partially insulated Finished Partially finished Unfinished		
Condition	Poor Fair Good	Poor Fair Good	Poor Fair Good	Poor Fair Good
Moisture problems	Yes No Source: _____	Yes No Source: _____	Yes No Source: _____	Yes No Source: _____
Mould (m ²)	_____	_____	_____	_____

Used as a living space/bedroom?	Yes	No	Don't know	N/A
Heated during winter?	Yes	No	Don't know	N/A
Evidence of flooding?	Yes	No	Don't know	N/A
Evidence of condensation (walls, windows, etc.)?	Yes	No	Don't know	N/A
Evidence of water leakage (efflorescence, stains, etc.)?	Yes	No	Don't know	N/A
Evidence of standing water?	Yes	No	Don't know	N/A

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Is the sump pit covered?	Yes	No	Don't know	N/A
Is the sump pit drained?	Yes	No	Don't know	N/A
Is the sump pit sealed?	Yes	No	Don't know	N/A
Does the sump pump function?	Yes	No	Don't know	N/A
Is there mould in the basement?	Yes	No	Don't know	N/A

Approximate total area of mould in the basement (m²): _____

Storage (select all that apply):	On floor	On shelves	Against exterior walls
	No storage	Don't know	N/A

Notes:

Heating (air temperature):	Good	Fair	Poor	Don't know
Air circulation:	Good	Fair	Poor	Don't know
Housekeeping:	Good	Fair	Poor	Don't know
Clutter/storage:	Not cluttered	Partially cluttered	Very cluttered	
Odours:	None Fragrant	Musty/earthy Chemical (gas, petroleum)	Dusty	Stale Food

Evidence of pests (rodents, ants, cockroaches, etc)? Yes No Don't know

If yes, describe the type of pest: _____

Frequency of the problem: Frequent Occasional Rare

Mechanical and Electrical Systems

Heating

Type: Electric baseboards Hot water radiators Wood stove Forced-air furnace
Other (fireplace, space heaters, etc.) — Specify: _____

Energy: Oil Wood Propane Electricity Natural Gas

Other: _____

Are the ducts clean?	Yes	No	Don't know	N/A
For forced-air furnace systems, is furnace filter clean?	Yes	No	Don't know	N/A
Humidifier-mounted on furnace?	Yes	No	Don't know	N/A
Is it operating?	Yes	No	Don't know	N/A
Condition:	Good	Fair	Poor	N/A

Notes:

Central Ventilation

Is there an HRV or air exchanger?	Yes	No	Don't know	
Is it serviced regularly?	Yes	No	Don't know	N/A
Is it functioning?	Yes	No	Don't know	N/A
Are filters clean?	Yes	No	Don't know	

Is there a dehumidifier?	Yes	No	Don't know	
Is the dehumidifier connected to a drain?	Yes	No	Don't know	N/A
If not connected to a drain, how is the condensate stored or drained?				
Is the drain pan clean?	Yes	No	Don't know	N/A
Is the drain pan hose connected?	Yes	No	Don't know	N/A

Outdoor intake/exhaust hoods clean?	Yes	No	Don't know	N/A	
Airflow at outside supply/exhaust vents:	Good	Fair	Poor	None	N/A

Notes:

Air Conditioning

Is there air conditioning?	Yes	No	Don't know	N/A
Type:	Window	Central	Mini-split	Portable
Frequency of use:	All summer	Occasionally	Rarely	Never
Condensate drainage:	Drained	Not drained		

Hot Water Tank

Type:	Storage tank	Instantaneous	Other			
Energy Source:	Electricity	Propane	Oil	Natural gas	Other	
Age of unit:	0–1 years	10–2 years	20+ years			
Location:	Basement	Main floor	Second floor	Utility room	Bathroom	Closet
Installed in a:	Drip pan	Overflow pan	Leak pan	N/A		
Leaks from tank, drain valve or pressure/temperature relief valve:		Yes	No	Don't know		
Leaks or condensation on pipes connected to tank:		Yes	No	Don't know		
Moisture or moisture damage under tank:		Yes	No	Don't know		

Clothes Washer

Is there a clothes washer?	Yes	No				
Type:	Top loading	Front loading				
Leaks in pipes or fittings attached to washer:		Yes	No	Don't know		
Location:	Basement	Main floor	Second floor	Utility room	Bathroom	Closet
Moisture or moisture damage under washer:		Yes	No	Don't know		
Properly drained to the waste water system:		Yes	No	Don't know		

Clothes Dryer

Is there a clothes dryer?	Yes	No				
Location:	Basement	Main floor	Second floor	Utility room	Bathroom	Closet
Vented outdoors:	Yes	No				
Outdoor hood screen clean:	Yes	No				
Installation of dryer duct:	Runs directly outdoors, few elbows			Long run outdoors, numerous elbows		
Condition of dryer duct:	Joints taped	Constrictions	Disconnections	Clean/free of lint		

Crawl Space

	Ceiling		Walls		Floors		Windows/doors	
Materials	Finished		Finished		Finished		Finished	
	Unfinished		Unfinished		Unfinished		Unfinished	
Condition	Poor		Poor		Poor		Poor	
	Fair		Fair		Fair		Fair	
	Good		Good		Good		Good	
Moisture problems	Yes	No	Yes	No	Yes	No	Yes	No
	Source:		Source:		Source:		Source:	
	_____		_____		_____		_____	
Mould (m ²)	_____		_____		_____		_____	

Interior insulation on walls:

Type:	Yes	No	Don't know	
Condition:	Batt	Rigid board	Spray applied foam	Other
Air or vapour barrier:	Yes	No	Don't know	
Condition:	Good	Fair	Poor	

Interior insulation on floors:

Type:	Yes	No	Don't know	
Condition:	Batt	Rigid board	Spray applied foam	Other
Air or vapour barrier:	Yes	No	Don't know	
Condition:	Good	Fair	Poor	

Heated during winter: Yes No Don't know

Used for storage: Yes No Don't know

Odours:

Type:	Yes	No	Don't know	
	Musty/earthy	Dusty	Stale	Chemical

Evidence of flooding? Yes No Don't know

Evidence of condensation (walls, windows, etc.)? Yes No Don't know

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Evidence of water leakage (efflorescence, stains, etc.)?	Yes	No	Don't know
Evidence of standing water?	Yes	No	Don't know
Is there mould?	Yes	No	Don't know
Approximate total area of mould (m ²): _____			
Notes:			
Evidence of pests (rodents, ants, cockroaches, etc.)?	Yes	No	Don't know
Describe the type of pest: _____			
Frequency of the problem:	Frequent	Occasional	Rare
Notes:			
Other comments/observations:			

Living Room

	Ceiling	Walls	Floors	Windows/doors
Materials	Drywall Wood Tile Other: _____	Drywall Wood Panelling Other: _____	Unfinished Carpet Wood Composite tile Sheet flooring Other: _____	Wood Metal Vinyl Aluminum Other: _____
	Finished Partially finished Unfinished	Insulated Uninsulated Partially insulated Finished Partially finished Unfinished		Number of panes: _____ Condensation on panes: Yes No
Condition	Poor Fair Good	Poor Fair Good	Poor Fair Good	Poor Fair Good

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Moisture problems	Yes	No	Yes	No	Yes	No	Yes	No
	Source: _____		Source: _____		Source: _____		Source: _____	
Mould (m ²)	_____		_____		_____		_____	

Heating (air temperature): Good Fair Poor Don't know

Air circulation: Good Fair Poor Don't know

Housekeeping: Good Fair Poor Don't know

Clutter/storage: Not cluttered Partially cluttered Very cluttered

Odours: None Musty/earthy Dusty Stale Food
 Fragrant Chemical (gas, petroleum)

Evidence of pests (rodents, ants, cockroaches, etc)? Yes No Don't know
 Describe the type of pest: _____

Frequency of the problem: Frequent Occasional Rare

Notes: _____

Other comments/observations: _____

Dining Room

	Ceiling	Walls	Floors	Windows/doors
Materials	Drywall Wood Tile Other: <hr/> Finished Partially finished Unfinished	Drywall Wood Panelling Other: <hr/> Insulated Uninsulated Partially insulated Finished Partially finished Unfinished	Unfinished Carpet Wood Composite tile Sheet flooring Other: <hr/>	Wood Metal Vinyl Aluminum Other: <hr/> Number of panes: <hr/> Condensation on panes: Yes No
Condition	Poor Fair Good	Poor Fair Good	Poor Fair Good	Poor Fair Good
Moisture problems	Yes No Source: <hr/>	Yes No Source: <hr/>	Yes No Source: <hr/>	Yes No Source: <hr/>
Mould (m²)	<hr/>	<hr/>	<hr/>	<hr/>

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Heating (air temperature):	Good	Fair	Poor	Don't know
Air circulation:	Good	Fair	Poor	Don't know
Housekeeping:	Good	Fair	Poor	Don't know
Clutter/storage:	Not cluttered	Partially cluttered	Very cluttered	
Odours:	None Fragrant	Musty/earthy Chemical (gas, petroleum)	Dusty	Stale Food
Evidence of pests (rodents, ants, cockroaches, etc)? Describe the type of pest: _____		Yes	No	Don't know
Frequency of the problem:		Frequent	Occasional	Rare
Notes:				
Other comments/observations:				

Kitchen

	Ceiling	Walls	Floors	Windows/doors	Under sink
Materials	Drywall Wood Tile Other: _____	Drywall Wood Paneling Other: _____	Unfinished Carpet Wood Composite tile Sheet flooring Other: _____	Wood Metal Vinyl Aluminum Other: _____ Number of panes: _____ Condensation on panes: Yes No	
	Poor Fair Good	Poor Fair Good	Poor Fair Good	Poor Fair Good	Poor Fair Good

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	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
	Source:		Source:		Source:		Source:		Source:	
Moisture problems	_____		_____		_____		_____		Plumbing Leaks Condensation on pipes Evidence of moisture damage on nearby surfaces N/A	
Mould (m ²)	_____		_____		_____		_____		_____	

Is there a range hood fan?	Yes	No	Don't know		
Is it functioning?	Yes	No	Don't know	N/A	
Is it vented outside?	Yes	No	Don't know	N/A	
Airflow at outside hood:	Good	Fair	Poor	None	N/A
Is there an HRV exhaust grille?	Yes	No	Don't know	N/A	
Is the filter in the exhaust grille clean?	Yes	No	Don't know	N/A	
Airflow going into the exhaust grille:	Good	Fair	Poor	None	N/A
Is there a ceiling fan?	Yes	No	Don't know		
Heating (air temperature):	Good	Fair	Poor	Don't know	
Air circulation:	Good	Fair	Poor	Don't know	
Housekeeping:	Good	Fair	Poor	Don't know	
Clutter/storage:	Not cluttered		Partially cluttered		Very cluttered
Odours:	None	Musty/earthy	Dusty	Stale	Food
	Fragrant	Chemical (gas, petroleum)			

Evidence of pests (rodents, ants, cockroaches, etc)?	Yes	No	Don't know
Describe the type of pest: _____			
Frequency of the problem:	Frequent	Occasional	Rare
Notes:			
Other comments/observations:			

Bedroom 1

	Ceiling	Walls	Floors	Windows/doors
Materials	Drywall Wood Tile Other: _____ Finished Partially finished Unfinished	Drywall Wood Panelling Other: _____ Insulated Uninsulated Partially insulated Finished Partially finished Unfinished	Unfinished Carpet Wood Composite tile Sheet flooring Other: _____	Wood Metal Vinyl Aluminum Other: _____ Number of panes: _____ Condensation on panes: Yes No
Condition	Poor Fair Good	Poor Fair Good	Poor Fair Good	Poor Fair Good
Moisture problems	Yes No Source: _____ _____	Yes No Source: _____ _____	Yes No Source: _____ _____	Yes No Source: _____ _____
Mould (m²)	_____	_____	_____	_____

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Are closets located next to exterior walls?	Yes	No	Don't know	N/A	
Evidence of moisture, mould or musty odour in the closet:	Yes	No	Don't know	N/A	
Heating (air temperature):	Good	Fair	Poor	Don't know	
Air circulation:	Good	Fair	Poor	Don't know	
Housekeeping:	Good	Fair	Poor	Don't know	
Clutter/storage:	Not cluttered	Partially cluttered		Very cluttered	
Odours:	None Fragrant	Musty/earthy Chemical (gas, petroleum)	Dusty	Stale	Food
Evidence of pests (rodents, ants, cockroaches, etc)?	Yes	No	Don't know		
Describe the type of pest: _____					
Frequency of the problem:	Frequent		Occasional	Rare	
Notes: _____					
Other comments/observations: _____					

Bedroom 2

	Ceiling	Walls	Floors	Windows/doors
Materials	Drywall Wood Tile Other: <hr/> Finished Partially finished Unfinished	Drywall Wood Panelling Other: <hr/> Insulated Uninsulated Partially insulated Finished Partially finished Unfinished	Unfinished Carpet Wood Composite tile Sheet flooring Other: <hr/>	Wood Metal Vinyl Aluminum Other: <hr/> Number of panes: <hr/> Condensation on panes: Yes No
Condition	Poor Fair Good	Poor Fair Good	Poor Fair Good	Poor Fair Good
Moisture problems	Yes No Source: <hr/>	Yes No Source: <hr/>	Yes No Source: <hr/>	Yes No Source: <hr/>
Mould (m²)	<hr/>	<hr/>	<hr/>	<hr/>

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Are closets located next to exterior walls?	Yes	No	Don't know	N/A	
Evidence of moisture, mould or musty odour in the closet:	Yes	No	Don't know	N/A	
Heating (air temperature):	Good	Fair	Poor	Don't know	
Air circulation:	Good	Fair	Poor	Don't know	
Housekeeping:	Good	Fair	Poor	Don't know	
Clutter/storage:	Not cluttered	Partially cluttered		Very cluttered	
Odours:	None Fragrant	Musty/earthy Chemical (gas, petroleum)	Dusty	Stale	Food
Evidence of pests (rodents, ants, cockroaches, etc)?	Yes	No	Don't know		
Describe the type of pest: _____					
Frequency of the problem:	Frequent		Occasional	Rare	
Notes: _____					
Other comments/observations: _____					

Bedroom 3

	Ceiling	Walls	Floors	Windows/doors
Materials	Drywall Wood Tile Other: <hr/> Finished Partially finished Unfinished	Drywall Wood Panelling Other: <hr/> Insulated Uninsulated Partially insulated Finished Partially finished Unfinished	Unfinished Carpet Wood Composite tile Sheet flooring Other: <hr/>	Wood Metal Vinyl Aluminum Other: <hr/> Number of panes: <hr/> Condensation on panes: Yes No
Condition	Poor Fair Good	Poor Fair Good	Poor Fair Good	Poor Fair Good
Moisture problems	Yes No Source: <hr/>	Yes No Source: <hr/>	Yes No Source: <hr/>	Yes No Source: <hr/>
Mould (m²)	<hr/>	<hr/>	<hr/>	<hr/>

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Are closets located next to exterior walls?	Yes	No	Don't know	N/A	
Evidence of moisture, mould or musty odour in the closet:	Yes	No	Don't know	N/A	
Heating (air temperature):	Good	Fair	Poor	Don't know	
Air circulation:	Good	Fair	Poor	Don't know	
Housekeeping:	Good	Fair	Poor	Don't know	
Clutter/storage:	Not cluttered	Partially cluttered		Very cluttered	
Odours:	None Fragrant	Musty/earthy Chemical (gas, petroleum)	Dusty	Stale	Food
Evidence of pests (rodents, ants, cockroaches, etc)?	Yes	No	Don't know		
Describe the type of pest: _____					
Frequency of the problem:	Frequent		Occasional	Rare	
Notes: _____					
Other comments/observations: _____					

Bathroom 1

	Ceiling	Walls	Floors	Windows/doors
Materials	Drywall Wood Tile Other: <hr/>	Drywall Wood Panelling Other: <hr/>	Unfinished Carpet Wood Composite tile Sheet flooring Other: <hr/>	Wood Metal Vinyl Aluminum Other: <hr/>
	Finished Partially finished Unfinished	Insulated Uninsulated Partially insulated Finished Partially finished Unfinished		Number of panes: <hr/> Condensation on panes: Yes No
Condition	Poor Fair Good	Poor Fair Good	Poor Fair Good	Poor Fair Good
Moisture problems	Yes No Source: <hr/>	Yes No Source: <hr/>	Yes No Source: <hr/>	Yes No Source: <hr/>
Mould (m ²)	<hr/>	<hr/>	<hr/>	<hr/>

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Is there an exhaust fan?	Yes	No	Don't know		
Is it functioning?	Yes	No	Don't know	N/A	
Is it vented outside?	Yes	No	Don't know	N/A	
Airflow at outside hood:	Good	Fair	Poor	None	N/A
Is there an HRV exhaust grille?	Yes	No	Don't know	N/A	
Is the filter in the exhaust grille clean?	Yes	No	Don't know	N/A	
Airflow going into the exhaust grille:	Good	Fair	Poor	None	N/A
Heating (air temperature):	Good	Fair	Poor	Don't know	
Air circulation:	Good	Fair	Poor	Don't know	
Housekeeping:	Good	Fair	Poor	Don't know	
Clutter/storage:	Not cluttered	Partially cluttered		Very cluttered	
Odours:	None Fragrant	Musty/earthy Chemical (gas, petroleum)	Dusty	Stale	Food
Evidence of pests (rodents, ants, cockroaches, etc)?	Yes	No	Don't know		
Describe the type of pest: _____					
Frequency of the problem:	Frequent		Occasional	Rare	
Notes:					
Other comments/observations:					

Bathroom 1 (cont.)

	Bath/shower surround	Under Sink	Toilet
Materials	Tile Fibreglass Plastic Other: _____		
Condition	Poor Fair Good Sealants: Poor Fair Good N/A	Poor Fair Good Sealants: Poor Fair Good N/A Plumbing: Poor Fair Good	Poor Fair Good Sealants: Poor Fair Good N/A Plumbing: Poor Fair Good
Moisture problems	Yes No Source: _____	Yes No Source: _____	Yes No Source: Leaks Condensation Moisture damage
Mould (m²)	_____	_____	_____

Bathroom 2

	Ceiling	Walls	Floors	Windows/doors
Materials	Drywall Wood Tile Other: <hr/>	Drywall Wood Panelling Other: <hr/>	Unfinished Carpet Wood Composite tile Sheet flooring Other: <hr/>	Wood Metal Vinyl Aluminum Other: <hr/>
	Finished Partially finished Unfinished	Insulated Uninsulated Partially insulated Finished Partially finished Unfinished		Number of panes: <hr/> Condensation on panes: Yes No
Condition	Poor Fair Good	Poor Fair Good	Poor Fair Good	Poor Fair Good
Moisture problems	Yes No Source: <hr/>	Yes No Source: <hr/>	Yes No Source: <hr/>	Yes No Source: <hr/>
Mould (m ²)	<hr/>	<hr/>	<hr/>	<hr/>

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Is there an exhaust fan?	Yes	No	Don't know		
Is it functioning?	Yes	No	Don't know	N/A	
Is it vented outside?	Yes	No	Don't know	N/A	
Airflow at outside hood:	Good	Fair	Poor	None	N/A
Is there an HRV exhaust grille?	Yes	No	Don't know	N/A	
Is the filter in the exhaust grille clean?	Yes	No	Don't know	N/A	
Airflow going into the exhaust grille:	Good	Fair	Poor	None	N/A
Heating (air temperature):	Good	Fair	Poor	Don't know	
Air circulation:	Good	Fair	Poor	Don't know	
Housekeeping:	Good	Fair	Poor	Don't know	
Clutter/storage:	Not cluttered	Partially cluttered		Very cluttered	
Odours:	None Fragrant	Musty/earthy Chemical (gas, petroleum)	Dusty	Stale	Food
Evidence of pests (rodents, ants, cockroaches, etc)?	Yes	No	Don't know		
Describe the type of pest: _____					
Frequency of the problem:		Frequent	Occasional	Rare	
Notes:					
Other comments/observations:					

Bathroom 2 (cont.)

	Bath/shower surround	Under Sink	Toilet
Materials	Tile Fibreglass Plastic Other: _____		
Condition	Poor Fair Good Sealants: Poor Fair Good N/A	Poor Fair Good Sealants: Poor Fair Good N/A Plumbing: Poor Fair Good	Poor Fair Good Sealants: Poor Fair Good N/A Plumbing: Poor Fair Good
Moisture problems	Yes No Source: _____	Yes No Source: _____	Yes No Source: Leaks Condensation Moisture damage
Mould (m²)	_____	_____	_____

9. General Operation, Housekeeping, Maintenance

General

Firewood stored in the house:	Yes	No	Don't know	N/A
Smoking indoors?	Yes	No	Don't know	N/A
Loads of laundry per day (washer):	0–2	2–5	5+	
Wet clothes hung to dry in the house/basement:	Yes	No	Don't know	N/A
Plants kept inside the house:	No	Few (less than 10)	Many (+10)	Don't know

Humidifier

Used:	Always	Occasionally	Never	N/A
Seasonal use (select all that apply):	Winter	Spring	Summer	Fall
Is there a humidifier?	Yes	No	Don't know	
Is there a humidifier located on the furnace?	Yes	No	Don't know	

Dehumidifier

Used:	Always	Occasionally	Never	N/A
Seasonal use (select all that apply):	Winter	Spring	Summer	Fall
Is there a humidifier?	Yes	No	Don't know	
Is there a dehumidifier connected to a drain?	Yes	No	Don't know	N/A
If not connected to a drain, how is the condensation stored or drained? _____				

Bathroom

Number of showers per day:	0–2	2–5	5+	N/A
Bathroom exhaust fan used?	Always	Occasionally	Never	N/A
If never, why not? _____				

Kitchen

Rangehood fan used?	Always	Occasionally	Never	N/A
If never, why not? _____				
Boiling water (hr/day):	0–1	1–5	5+	
Cooking (hr/day):	0–1	1–5	5+	

HRV

Is it used?	Always	Occasionally	Never	N/A
If never, why not? _____				

Thermostat

Temperature setting (approximately):	Lowered at night and during the day Lowered when away	Constant Don't know
Observed setting (in °C):	_____	
Most spaces in the house are:	Maintained at the same temperature Some are kept cooler (list them): _____	Don't know

Housekeeping

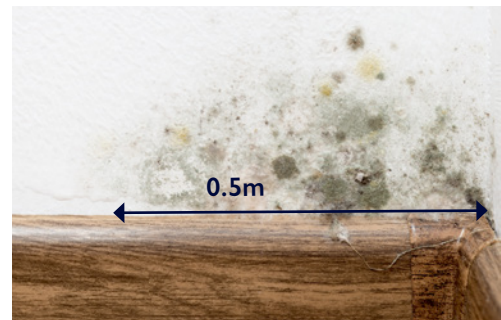
Is water/moisture quickly cleaned up?	Yes	No	Don't know	
Vacuum type:	Regular	Central	HEPA	Don't know
Frequency of vacuuming:	Daily Never	Weekly	Monthly	Infrequently
Frequency of dusting:	Daily Never	Weekly	Monthly	Infrequently
Other comments/observations: _____				

10. Mould Assessment Summary

Mould Severity

Small:

If there are one, two or three patches of mould and each patch is smaller than one square metre (1 m x 1 m). Mould on window sills are usually *small* areas.



Medium:

If there are more than three patches of mould (each smaller than one square metre) but the total mould area is less than three square metres (e.g. 1 m x 3 m or about the size of a 4 ft. x 8 ft. sheet of plywood). Patches close together are considered as one patch.



Large:

If a single patch of mould is larger than three square metres.



Conversion Chart

$$1\text{m}^2 = 10.8\text{ft}^2$$

$$3\text{m}^2 = 32\text{ft}^2$$

Assessment:

Use a checkmark (✓) to identify what size of mould area is found in the following spaces based on the mould area recorded on the previous pages.

Mould Severity	No mould	Small	Medium	Large	Cannot estimate
Living room					
Dining room					
Kitchen					
Bedroom 1					
Bedroom 2					
Bedroom 3					
Bathroom 1					
Bathroom 2					
Attic (if easily accessible)					
Basement					
Crawl space (if easily accessible)					
Other:					
Total number of checkmarks					

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