

A Comprehensive Guide to
Preventing Water Damage

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This loss control brochure is offered in the hope that readers will benefit from it and take adequate steps to avoid conditions that may result in loss. It does not intend to be a complete discussion of the subject, nor do we guarantee that compliance with its suggestions will assure the absolute safety of persons and property.



Preventing Water Damage

Common Causes of Interior and Exterior Damage

Normal wear and tear i.e. rust, corrosion, deterioration, settling, cracking, shrinking, expansion can all cause water intrusion or leaks to occur. Water can leak from plumbing, heating, air conditioning and other equipment. It can also seep in through cracks or other damage to a building's exterior. Interior damage often occurs in the kitchen, bath and laundry rooms due to the amount of water used in these areas and the types of fixtures and appliances being used.

Regular preventative maintenance and inspections of these areas help to find problems early and can keep repair costs from becoming expensive. Regular maintenance and inspections can also prevent or minimize interruptions to normal living and the activities of the clients you serve.

The sound of water dripping, stained ceilings, and black spots on walls or floors are just a few signs of potential water damage. These signs should never be taken lightly, and are often indications of much bigger problems! Many agencies, however, ignore the early signs and only make repairs when they start having significant problems which result in expensive repairs and significant interruption to normal living and work activities. This bulletin addresses some of the key areas of the building, equipment, kitchens, baths and laundry room inspections.

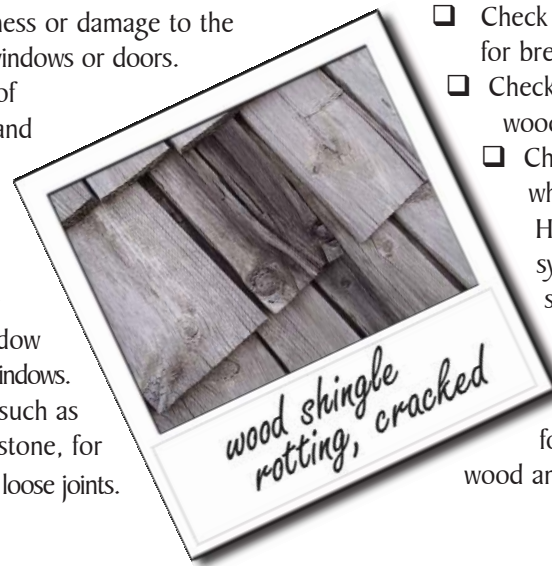


BUILDING AND SYSTEMS

The items on this list should typically be inspected twice a year, usually in the early spring and fall, unless otherwise noted.

Exterior walls, windows and doors

- Check for breaks, cracks, and discoloration of the weather-stripping, seals and window putty around doors and windows, as well as for loose, broken or cracked window glass.
- Check locks and closure mechanisms. Make sure doors and windows open and close properly and fit snugly against the seals. If necessary, lubricate any moving parts.
- Check for looseness or damage to the flashing around windows or doors.
- Check for signs of moisture above and below doors and windows. Also look for condensation on glass, particularly between the window panes and storm windows.
- Check masonry, such as brick, stucco or stone, for cracked mortar or loose joints.
- Check painted or finished wood surfaces on doors and windows for peeling, chipping, blistering, chalking, discoloration, mildew and signs of rot.
- Check siding, wood shingles and trim for loose, missing or cracked pieces, warping, or lifting.
- Check all painted or finished surfaces for peeling, chipping, blistering, chalking, discoloration, mildew and signs of rot.
- Check caulking where two different materials meet for breaks, cracks or discoloration.
- Check that there is at least 8 inches between wood siding and earth.
- Check all exterior wall penetrations, especially where wiring, plumbing, telephone, cable or HVAC (heating, ventilation and air conditioning) systems enter the building. These openings should be sealed with caulk, foam or other type of effective sealant.
 - In the spring, clean dirt and mildew from exterior surfaces, including the foundation. Mildew can deteriorate paint and wood and cause rot.



When completing an inspection, it is also important to locate and check the water shut-off valves to make sure they are in working order. Staff and consumers should also know where these valves are located. In the event of a leak, the water may need to be shut-off immediately to prevent further damage.

Another way to detect water problems early is to install water detection devices throughout the building. These devices can be stand-alone, battery-operated units that are either placed on the floor or wall-mounted under sinks or near appliances that use water. Whole-building systems are available that can automatically shut down the valve on the main water line if it suspects a leak. Some whole-building systems can also detect low pipe temperatures and can be connected to the local or central station alarm system.

Finally, there are a few things that facilities in areas of the country that experience freezing temperatures should keep in mind. If the building will be closed for an extended period, even over a weekend, during extremely cold weather, be cautious as to how low the heat is set. While a lower temperature may save on the heating bill, pipes that normally would not freeze could freeze during a cold snap. It is also important to drain garden hoses and store them for the winter, shut-off and drain the water supply to outside faucets and have the irrigation system winterized. When snow, ice and freezing rain occurs, it is important to check the roof and gutters regularly for the formation of icicles and ice dams which can force water up under roofing materials or siding.

Please keep in mind that regular inspections can help your agency spot problems early. This inspection checklist is general. There may be individual situations that need to be addressed differently. It is important to refer to the owner's manual for specific cleaning and servicing instructions when it comes to each appliance that utilizes water.

Kitchens

Sink

- ❑ Check backsplash, sink seals, caulking, countertop tile and grout. Look for cracks, discoloration, shrinkage, flaking and signs of mold.
- ❑ Check faucet and knobs to determine whether water is dripping when turned off.
- ❑ Check how the sink is draining and check the traps or supply lines for drips.
- ❑ Look for moist or stained areas in or under the wall where plumbing pipes penetrate. Opening should be filled with foam, caulks or other types of viable sealants.
- ❑ Check the floor beneath plumbing penetrations for signs of staining, mold, curling of flooring or other signs of water damage.



Dishwasher

- ❑ Check connections to make sure they are secure.
- ❑ Check water supply and drain traps for leaks when dishwasher is in operation.
- ❑ Check inside cabinets alongside dishwasher and along the base of the dishwasher for water or signs of water damage, such as warping or staining.
- ❑ Check to see if dishwasher backs up or overflows into the sink when it is running. If it does, clean the air gap and check the drain hose.
- ❑ Check to see if the dishwasher completely empties after each use.
- ❑ Check supply and drain hoses for kinks, cracks, and inflexibility or color changes. Hoses generally need to be replaced every couple of years. When replacing hoses, remember to use new washers and clamps.
- ❑ Check the door seal and hinges for damage.

Ice Maker

- ❑ Inspect icemaker line for kinks, cracks, inflexibility or color changes.
- ❑ Check the hose connection to ensure that it is secure.
- ❑ Check drain for leaks.
- ❑ Check inside cabinets alongside ice maker to make sure there is no water damage, such as warping or staining.
- ❑ Look for wet spots, dampness or signs of mold under and behind the ice maker.

Refrigerator/Freezer

- ❑ If the refrigerator has a drain pan, clean it to prevent water buildup.
- ❑ If the freezer has a drain cap, check to make sure it is secure.
- ❑ If the refrigerator has an ice maker or water dispenser, inspect the water line for kinks, cracks, inflexibility or color changes and make sure the hose connections are secure.

Garbage Disposal

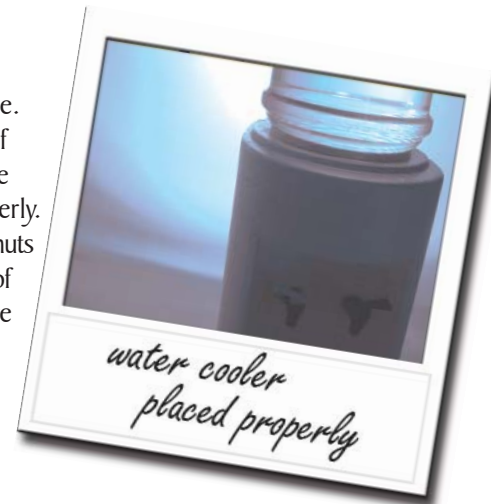
- ❑ Check connections and seals to make sure they are secure and undamaged.
- ❑ Check water supply and drain traps for leaks when disposal is in operation.
- ❑ Check inside cabinets alongside dishwasher to make sure there is no water damage, such as warping or staining.

Hot Water Dispenser

- ❑ Check water supply for leaks when dispenser is in operation.
- ❑ Inspect water line for kinks, cracks, inflexibility or color changes.
- ❑ Check hose connection to ensure that it is secure.

Water Cooler

- ❑ Make sure the faucet is secure.
- ❑ Check to see if the water bottle is placed properly.
- ❑ Make sure the nuts at the bottom of the reservoir are secure.



Laundry room Washing Machine

- ❑ Make sure the fill valve and vacuum line are free of debris and cracks.
- ❑ Inspect discharge and hot/cold water fill hoses for leaks, deterioration, bulges, cracks and kinks. Typically, these hoses need to be replaced every five years.
- ❑ Leave 4 inches between the wall and washing machine to keep hoses from kinking.
- ❑ Remove any hard water (mineral buildup) from the water filters on the inlets.

Utility Sinks

- ❑ Check faucet and knobs to see if water is dripping when the water is turned off.
- ❑ Check how the sink is draining and check the traps or supply lines for drips.
- ❑ Look for moist or stained areas in or under the wall where plumbing pipes penetrate. Openings should be filled with foam, caulks or other types of sealants.
- ❑ Check the floor beneath plumbing for signs of staining, mold, curling of flooring or other signs of water damage.

Attic, Roof, Gutters and Downspouts

- ❑ Clean debris from roof, roof valley, gutters and down spouts. After removing accumulated debris, hose down the surfaces with water.
- ❑ Check the gutters and downspouts to ensure that they are securely attached. Also, check the fittings and joints connecting the gutters to the downspouts and the sections of gutters together to make sure they are water-tight.
- ❑ Check to make sure that the downspout discharge is at least five feet from the building and slopes away from the foundation or goes into an underground drain. If the gutters frequently fill with debris, consider installing gutter shields and doing more frequent cleaning.
- ❑ Examine the roofing materials, shingles, metal roofing, tile, membrane, etc., for damaged or missing pieces and areas that are cracking, curling, lifting, loosening, blistering, bubbling or showing signs of mold or moss growth. Flat roofs should also be inspected for ponding of water and damaged seals. Flat roofs without gravel or granules typically need to be re-tarred every two years. Flat roof drains can clog and hold water on the roof increasing the risk of a leak or collapse, so be sure to check the drains as well.
- ❑ Check the lower edge of roof sheathing, soffits and fascia boards for signs of water damage.
- ❑ Check the flashing around vents, dormers, skylights, chimneys and gutters for leaks, cracks or gaps. Flashing should be smooth and intact.
- ❑ Check vents and louvers to ensure that they are not obstructed and that there is free air movement. Look for leaks, condensation or rodents, bats or insects. If they are metal, check for rust damage. Vents should have hoods and make sure the exterior vent doors seal properly.
- ❑ Have the chimney cleaned and inspected annually. This should include the chimney cap, joints, flue liner, and if masonry, the condition of mortar, bricks, and stones.



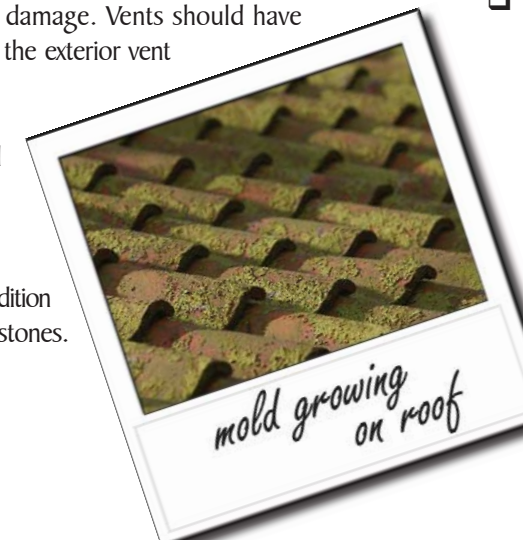
- ❑ Check the interior of the attic, the underside of the roof sheathing, beams and rafters for leaks, moisture, discoloration, mold, mildew and signs of rot or aging.
- ❑ Check to see if the insulation in the attic is in place, dry, and not blocking vents. Insulation should be soft and fluffy. Also check for an adequate amount of insulation and ventilation.
- ❑ Inspect all locations in the attic where something passes through the roof or exterior walls for signs of wetness, stains, mold and rot. If you can see daylight, repair the gaps.
- ❑ Check recessed lighting canisters that come into the attic from below. Rust or corrosion may indicate a moisture problem in the attic.

Foundations, basements and yards

- ❑ Check for changes in the landscape grade around the foundation. Landscape should slope away from the foundation. Recent modifications to landscaping, settling or improper grading should be corrected.
- ❑ Check automatic sprinklers to ensure that they do not spray water onto the exterior walls or foundations.
- ❑ Ensure that driveways, parking areas, patios or decks channel water away from the building. Driveways and parking areas should be sealed to prevent cracking and sinking, as well as to prevent rainwater from seeping into the ground beneath the driveway or parking area and toward the building.



- ❑ Trim bushes and shrubs to at least one foot from the foundation and remove leaf piles and compost that have gathered around the foundation and filled or blocked window wells or storm drains.
- ❑ Inspect the sump pumps to ensure they are working properly. Test by pouring water into the chamber and seeing if the float turns on the motor and drains the chamber. Ensure that the sump pump discharges water as far away from the building as possible. For areas where the sump pump is used often, it is recommended that you have a backup sump pump available and a battery back-up or generator system. If the sump pump operates frequently, find out if there is water buildup under the basement floor from poorly graded landscaping, improper drainage, gutter backflows, etc.
- ❑ Check any built-up barriers or flood shields around basement windows and doors to ensure that they are intact.



Foundations, Basements and Yards (Continued)

- ❑ Check the floor drains to make sure they are clear and that water drains out.
- ❑ Inspect overhead floor and through-the-wall penetrations, such as openings for drains, phone lines and plumbing to the outside, for leaks, moisture, discoloration, mold, mildew and signs of rot or

sagging. Openings should be sealed with caulk, foam or other sealant.

- ❑ Examine main support beams, support columns and floor joists for evidence of bowing, warping or decay.
- ❑ Check foundation walls inside and out for dampness, stains or white residue, leaks, cracks, decay and weakened or crumbling mortar. Many basements have cracks, so look for new cracks or changes in existing cracks. If the walls or floor are insulated, check to make sure that the insulation is in good condition. If the basement walls or floor are finished, look for signs of dampness, water stains or leaks, cracks, decay or white residue on the finished materials.
- ❑ If you have a crawlspace, check that the vapor barrier is in good condition and placed correctly. If you have a damp basement, use a dehumidifier and clean regularly.

PLUMBING

- ❑ Inspect shut-off valves at plumbing fixtures, appliances that use water, and at the water main to ensure proper functioning.
- ❑ Check faucets, hoses, fittings, connections and supply and drain lines, fixtures, and appliances that use water for signs of leaks, drips or condensation on pipes.
- ❑ Check drains for adequate flow.
- ❑ Check the insulation on exposed pipes in crawl spaces, basements, attics and areas near exterior walls for moisture or discoloration.
- ❑ Have a professional use an auger to clean out sewer and water pipes that are near tree roots to make sure that the roots have not forced themselves into the pipes.



- ❑ Have the septic tank inspected annually and pumped as needed.
- ❑ Have the service pump and holding tank for the well checked.
- ❑ Check the vents for all gas furnaces, boilers and hot water systems to ensure proper fit, free flow of exhaust air from the interior to the exterior, as well as for the absence of moisture, rust, and holes.

Water heater

- ❑ Inspect fittings and connections on the water inlet and discharge lines for leaks. Check the outside of the tank and bottom drain valve for moisture and signs of rust or mold. The area around the tank should be clean and dry.
- ❑ Make sure the overflow hose is properly connected and drains to the exterior of the building. Test the temperature-pressure relief valve by lifting or depressing the handle and draining water from the overflow pipe.
- ❑ Drain sediment from the tank to prevent rust from calcium buildup. Open the drain valve and drain a few gallons of water. If the water appears rusty, drain until the water runs clear. Remember that most water heaters only last 8-10 years, depending on water quality and hardness.

Boiler

- ❑ Check the boiler for leaking packing, fittings, pipes and radiators.
- ❑ Once a month, test the safety/relief valve to ensure proper operation.
- ❑ At the start of the heating season, have a competent service firm disassemble and thoroughly clean the low water cut-off and make-up feeding pumps and other water spaces.

Attic fan

- ❑ Clean the attic fan at the beginning of the cooling season. Be sure to clean the housing, fan blades, screens and vents.
- ❑ Perform maintenance as recommended by the manufacturer.

Air conditioner/cooling system

- ❑ Have the air conditioner serviced at the beginning of the cooling season. The service should include an inspection and cleaning of the condensation pan drain line, fittings and connections of water discharge lines and relief valves.
- ❑ Make sure the overflow hose is properly connected and drains to the exterior of the building.
- ❑ During the cooling season, call a service contractor if the air conditioner coils ice up or if the air conditioner runs all of the time.
- ❑ For window air conditioners, either remove them at the end of the cooling season or protect them with a waterproof cover.

Dehumidifier

- ❑ Have the dehumidifier serviced at the beginning of the wet season. The service should include an inspection and cleaning of the condensation pan drain line, fittings and connections of water discharge lines and relief valves.
- ❑ Check for clogged drain lines.
- ❑ If the dehumidifier coils ice up or if the unit runs all the time, call a qualified service contractor.
- ❑ Clean the dehumidifier according to the manufacturer's instructions.

Whole house humidifier

- ❑ Have the humidifier serviced in the fall by a qualified service contractor.
- ❑ Check the connections and drain for moisture.
- ❑ Check the ductwork to make sure it is well sealed.
- ❑ Check and clean the unit according to manufacturer's instructions.

BATHROOMS, KITCHENS, AND LAUNDRY ROOMS

When it comes to regular inspection, the following are key inspection areas for the bathroom, kitchen and laundry rooms (These items should be checked about two to four times per year. Any indications of leaks, water damage, cracks, and/or discoloration of seals, hoses or caulking should be repaired immediately).

Bathrooms

Tub/Shower

- ❑ Check seal, caulking and grout around the shower and/or tub, particularly around joints where walls meet the floor or bathtub. Look for cracks, discoloration, shrinkage, flaking and signs of mold.
- ❑ Check shower doors for leaks by looking for "soft" areas on the floor and walls near the doors.
- ❑ Check how the shower/tub is draining and check the traps or supply lines for drips.
- ❑ Check faucet, knobs and showerhead to see if water is dripping when the water is turned off.

Sink

- ❑ Check backsplash, sink seals, caulking, countertop tile and grout. Look for cracks, discoloration, shrinkage, flaking and signs of mold.
- ❑ Check faucet and knobs to determine whether water is dripping when turned off.
- ❑ Check how the sink is draining and check the traps or supply lines for drips.
- ❑ Look for moist or stained areas in or under the wall where plumbing pipes penetrate. Openings should be filled with foam, caulks or other types of viable sealants.
- ❑ Check the floor beneath plumbing penetrations for signs of staining, mold, curling of flooring or other signs of water damage.



Toilet

- ❑ Check water line for leaks.
- ❑ Check toilet rim seal and tank seal.
- ❑ Check the base of the toilet and the floor surrounding it for signs of staining, mold, curling of flooring or other signs of water damage. Try standing and straddling the toilet. Shift your weight from one foot to the other. If the floor feels spongy, the floor could be rotting from water damage.
- ❑ Check the flush of the toilet by loosely rolling a ball of toilet paper and then flush. If it flushes slowly, there could be calcium deposits, a clog, or the toilet may need to be replaced.

Exhaust Fan

- ❑ Check to make sure the fan comes on and operates normally.
- ❑ Check the area around the fan to make sure it is clean and dry.
- ❑ Check for dust or growth on the fan blades and inside the duct.
- ❑ Check the exterior vent dampers to make sure they operate properly, seal well and oil the damper hinges.
- ❑ Clean the exhaust fans of dirt and debris regularly from indoors and out.