



Residential Windows and Exterior Doors

Check out the “For More Information” section at the end of this bulletin for other publications that provide more detail on terminology and types of windows and doors.

This bulletin presents information on inspection and maintenance to ensure good long-term performance of windows and exterior doors. The information also aids in recognizing when professional assistance is required.

Types of Windows and Exterior Doors

A useful first step in window and door maintenance is to become more familiar with the common terms used to describe windows and doors and their various parts.

There are two main types of windows – those that open, referred to as “operable windows”, and those that do not open, referred to as “fixed windows”. Your home may have different types of operable windows, such as awning, casement, hopper, horizontal slider, or tilt and turn windows. The opening part of operable windows is often referred to as a “sash” or “vent”. The window frames can be made of wood, metal or vinyl. The transparent portion of the window is typically referred to as the “glazing”.

Exterior doors generally come in two varieties: hinged or sliding such as sliding patio doors. Exterior doors are generally made of metal, wood, or fiberglass over a foam core. Sliding patio door frames are usually made of metal or vinyl, and resemble a large horizontal sliding window.

Operable windows and exterior doors share similar methods of providing an air and weather seal, or what is commonly referred to as weather-stripping. Weather-stripping reduces air infiltration, and is located between the frame and the operable window or door. There are two main types of weather-stripping: “compression” type seal that gets squeezed between the sash/door and frame of hinged products, and “brush-type” seals for sliding windows or patio doors.

Skylights are a specialty item and are not specifically addressed in this bulletin, although most of what is described for windows and doors can also be applied to skylights.



Windows and exterior doors deteriorate over time due to age, wear and tear and the weather, and require ongoing inspection and maintenance.

Maintaining your building envelope

This publication is one in a series of bulletins designed to provide practical information on the maintenance of the building envelope of multi-unit residential buildings, including town-houses, low and high-rise residential buildings.

What is a building envelope/enclosure?

The building envelope or building enclosure includes all parts of the building (assemblies, components and materials) that are intended to separate the interior space of the building from the exterior climatic conditions. It includes, for example, the foundation, exterior walls, windows, exterior doors, balconies, decks and the roof.

Who should read this bulletin?

Anyone who lives in or looks after a multi-unit residential building should read this bulletin, including residents/unit owners, strata councils, housing co-operatives, maintenance managers, property managers or building owners. Proper maintenance of the building envelope can help prevent damage and avoid costly repairs in the future.



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Residents can carry out a few basic inspection and maintenance tasks on the interior side only, such as cleaning the sills, frames, door surfaces or glass.



Weather-stripping and operating hardware for your windows are important maintenance items.

Residents should report symptoms of potential problems or maintenance concerns to the building's maintenance manager.

Why do Windows and Doors need to be Maintained?

Windows and exterior doors deteriorate over time due to age, usage, wear and tear and exposure to the weather. Proper maintenance will ensure that they remain in good working order for as long as possible, and continue to function well in terms of providing clear vision to the outdoors, as well as providing security, access, light, ventilation, weather protection and aesthetics.

A relatively small investment in maintenance will extend the life of your doors and exterior windows, reduce heat loss and energy consumption. Most importantly, proper maintenance will help prevent major damage that can arise through condensation or water leakage from the window or exterior door into the interior of the building or into the wall assembly.

What Maintenance Must be Performed?

Generally speaking, proper inspection and maintenance should cover all components that make-up windows or exterior doors, including:

- glass/glazing
- frame material and finishes
- operating hardware such as handles, cranks, hinges, latches, locks
- weather-stripping
- screens
- sealant joints and gaskets, and
- surrounding interior finishes for any signs of water leakage or damage.

Inspection and maintenance of windows and doors should be coordinated by your maintenance manager or an experienced inspector or contractor because of the technical nature of what needs to be inspected and maintained, and also to ensure that important safety concerns are addressed.

Residents can carry out a few basic inspection and maintenance tasks on the interior side only, such as cleaning the sills, frames, door surfaces or glass. Beyond this, however, residents should report symptoms of potential problems or maintenance concerns to the building manager. Specific inspection and maintenance items will depend on the type of windows and exterior doors that you have. Ensure that any maintenance guides for your building are referenced and closely followed, as well as any information provided by

the window or door manufacturer. A checklist of common window and door maintenance items is described in more detail on page 3.

How Often do Windows and Exterior Doors Need to be Inspected and Maintained?

All windows and exterior doors require regular semi-annual inspections, for example each spring and fall. Maintenance should be done at least annually, but may be required more often, especially as your windows or exterior doors age. A record of inspections and complaints should be kept for your building by your building/maintenance manager.

A reasonably well-built window or door assembly should have a life expectancy of 30+ years, but much depends on the size of the openings, level of exposure to the elements and, of course, maintenance. A small window under a deep overhang in a one-storey building will not require as much attention as a very large window in a high-rise residential building or in an apartment building facing a large open area, ocean, river or lake that has more exposure to the elements.

Condensation

Evidence of any condensation problems should be identified during the inspection and maintenance process. Condensation results when warm, moist air comes into contact with a cold surface and the moisture in the air reverts to its liquid form. Condensation can lead to substantial deposits of water on the window and interior wall surfaces, and must be controlled to avoid problems.

Wood and vinyl frames are less likely to develop condensation problems as the materials are good insulators from colder outside temperatures. Some metal frames are not good insulators because it lets the colder outside temperature move through the entire frame and can be a source of condensation problems on the interior side of windows and doors. Report persistent condensation problems to your maintenance manager.

For more information, see Maintenance Matters #3, Avoiding Condensation Problems

Checklist of Common Window and Door Maintenance Items

Maintenance Items

Description and Suggested Action

Accumulation of dirt and debris at the sill

Presence of dirt and debris can affect proper functioning window openings and doors, and can block drainage holes that carry moisture to the outside. Vacuum and clean sills on a regular basis, and clean any drain openings that may exist on the interior side if they appear blocked.

Dirty, damaged or worn out weather-stripping

Notify your maintenance manager if there is a problem with the weather-stripping as it is important to ensure a continuous and tight-fitting seal around operable windows and exterior doors.

Loose or missing seals and gaskets

Glazing seals provide a weather tight connection between the glass and the frame or sash components, and can become damaged or worn over time. Repair or replacement generally requires the services of qualified contractor and would be coordinated by your building manager.

Failed sealed glazing units (condensation appears between layers of glass within the frame)

When the seals between the window panes fail, moisture can get in and condense on the inner surfaces of the glass, a condition called “fogging”. Contact your building manager as the glazing likely needs to be replaced. As a preventative measure, the perimeter seal on the interior side should be kept dry without allowing moisture to stay on the window frames, in contact with the seal, for an extended period of time. Check to see if there is an existing warranty on the windows as sealed units are typically warranted by the manufacturer for 10 years against fogging.

Improper hardware operation

Your windows and doors should operate smoothly and lock securely. The moving parts of your window and exterior doors should be kept clean and properly lubricated, and can be more susceptible to problems in coastal (salt-air) environments. Specific maintenance items to be coordinated by your maintenance manager include: adjustments to the rollers on sliding exterior doors, windows and screens to ensure proper clearances, and checking safety and security items such as locks, hinges and window stops. Adjustments may require a specialist technician.

Dirty, stained or deteriorating frame finishes



A number of items to consider:

- Interior side of frames should be cleaned regularly with mild soap and water, and rinsed thoroughly. Don't wash frames when surfaces are hot.
- Wood frames require paint or stain every five to 10 years.
- Wood sills are more susceptible to damage, so keep sill finishes and sealant in good condition.
- Insect screens can be washed with a soft brush and mild soap and water, then rinsed and dried thoroughly before reinstallation. Depending on your building, this task may be carried out by the building/maintenance manager.

Maintenance such as cleaning on the exterior side of frames should be looked after by the building manager. A hose or pressure washer should not be used for cleaning windows or doors as this may drive water into the window assembly.

Condition of the sealant at joints at the bottom inside corners of the window frame

Aluminum windows are typically built with joints at these locations, and sealant is applied to stop any moisture from draining into the window frame and wall itself because moisture can cause significant damage. The inspection and maintenance of this item should be coordinated by your maintenance manager.



Windows and exterior doors require regular semi-annual inspections, for example each spring and fall.

Residents should report symptoms of potential problems or maintenance concerns to the building's maintenance manager.

Glass Care and Maintenance

If your building has a window cleaning service, it should be directed to ensure that the following steps are taken for glass care and maintenance:

- Glass should be cleaned regularly with the use of mild soap and water, thoroughly rinsed and wiped dry.
- Do not have the glass washed when the surfaces are hot and don't let the soap solution dry on the surface.
- Water under high pressure, such as a high-pressure hose or pressure washer, should not be used to rinse the windows as this may drive water into the building envelope or wall assembly.
- Cleaning agents containing abrasives or strong chemicals and solvents should not be used.
- Extreme caution should be used to avoid damaging the surrounding glazing seals when cleaning windows.

Action Plan Tips

- Windows and exterior doors should be inspected on a semi-annual basis, for example each spring and fall. Look for leaks, condensation problems and the items listed on the checklist of common window and door maintenance items (see page 3).
- Inspection and maintenance items should be coordinated by your maintenance manager or an experienced inspector or contractor.
- Notify your maintenance manager if you have a concern with your windows or exterior doors.
- A record of inspections and complaints should be kept for your building.
- Maintenance and repair items should be carried out promptly.

For More Information

1. *About Your House* fact sheets on Understanding Window Terminology (CE 5A), The ABC's of Windows (CE 58), and Window and Door Renovations (CE 28f), published by Canada Mortgage and Housing Corporation (CMHC). Available online at www.cmhc.ca.
2. *CMHC Water and Energy Saving Tip of the Week* fact sheets for multi-unit residential buildings on Upgrade Weatherstripping on Windows (BE9) and Upgrade Weatherstripping on Doors (BE10), published by CMHC. Available online at www.cmhc.ca.
3. *Consumer's Guide to Buying Energy-Efficient Windows and Doors*, published by Natural Resources Canada, Office for Energy Efficiency. Available online at www.oeo.nrcan.gc.ca.
4. *Condensation on Inside Window Surfaces* (Canadian Building Digest 4), published by National Research Council of Canada's Institute for Research in Construction. <http://www.nrc-cnrc.gc.ca/eng/rd/construction/index.html>.
5. *Builders' Manual*, published by Canadian Home Builders' Association. Available online at www.buildermanual.com.
6. *Glazing Contractors' Association of BC* website including their *Glazing Specification Manual*. Available online at www.gca-bc.org.
7. See your building's maintenance manual.
8. Information brochures provided by the window or door manufacturers.



Your windows and doors should operate smoothly and lock securely.

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