

Window Types and Materials

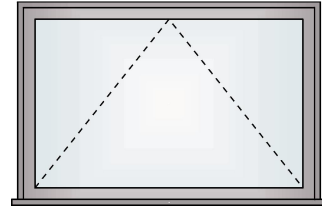
There are many window designs in use today:

- a) Awnings (Top-Hinged)
- b) Casement (Side-Hinged)
- c) Picture (Fixed)
- d) Horizontal Slider
- e) Single Hung
- f) Double Hung
- g) Tilt and Turn
- h) Hopper
- i) Bay and Bow
- j) Custom
- k) Storm

Window Styles

a) Awning Windows

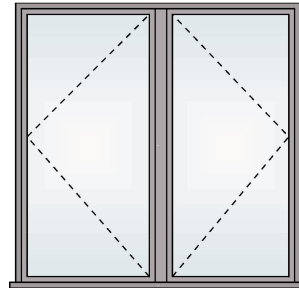
Awning windows pivot at the top and may have outward or inward-swinging sash; the most common is the outward-swinging sash. Awning windows are usually operated with a roto-gear or push-out lever so that the window can be adjusted to keep out rain but let in fresh air. This window type provides up to 50% ventilation area, as the hardware does not allow them to be fully opened.



Awning

b) Casement Windows

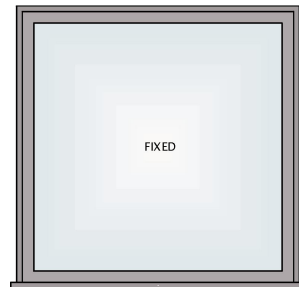
Casement windows swing outward on side hinges. These windows can be hinged left or hinged right (as viewed from the outside) and are operated with a roto-gear and crank. Casement windows provide almost 100% ventilation area, because they can be fully opened and the out-swinging sash can direct plenty of air into the building.



Casement

c) Picture Windows

Picture windows are fixed windows that do not open. They are used to let in a lot of light and to take advantage of a view. Picture windows are often used in combination with operating windows.

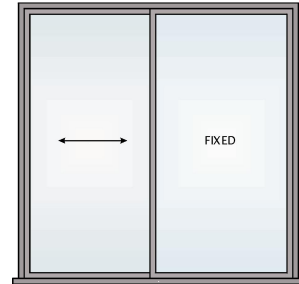


Fixed

Window Styles

d) Horizontal Sliders

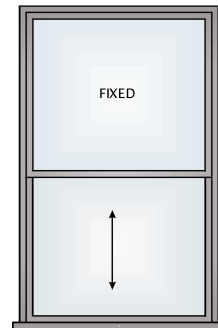
These windows have sash that slide horizontally. Single sliders have one fixed sash, while double sliders have two movable sash. Most horizontal sliders have at least one removable sash.



Sliding

e) Single Hung Windows

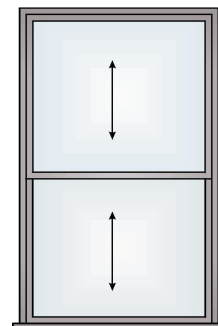
A single hung window is a vertical slider in which the top pane of glass is fixed and the bottom sash moves. In some designs, the sash tilts in for ease of cleaning.



Single Hung

f) Double Hung Windows

Double hung windows are similar to single hung windows, except that both sash move and are controlled by a balancing mechanism so the sash do not fall down when raised.

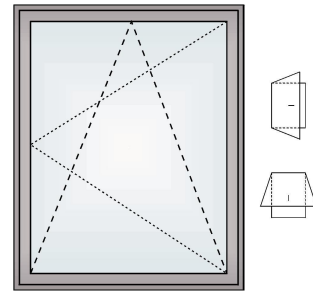


Double Hung

Window Styles

g) Tilt & Turn Windows

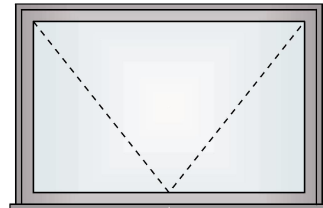
These windows first appeared in Europe but are now used in North America. Special hardware allows tilt & turn windows to tilt inwards for ventilation, or to pivot from the side like a casement window.



Tilt-and-Turn

h) Hopper Windows

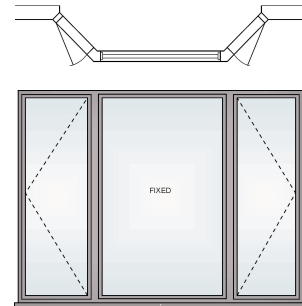
A hopper window is the reverse of an awning window in that it pivots at the bottom and opens inward.



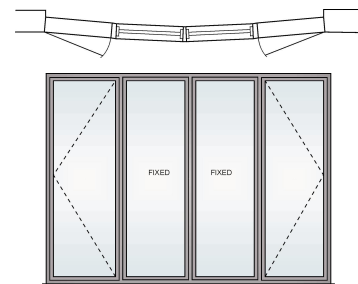
Hopper

i) Bay and Bow Windows

Bays and bows are a combination of windows that project outward from a building wall. A bay window has a fixed centre window parallel to the wall flanked by two operating windows (casement or double hung windows) attached at an angle (usually 45°). Bow windows have more than three sections set at gentle angles (usually 10°) that give the window a curved appearance (like a bow).



Bay Window

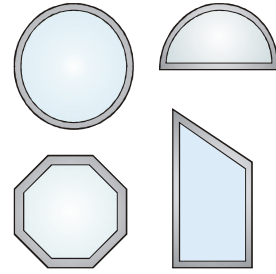


Bow Window

Window Styles

j) Custom Windows

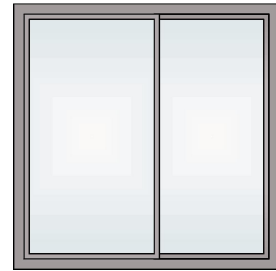
There are many shapes of windows now in use, including circles, half rounds, octagons, fans, and many other geometric shapes. These geometric shapes can be used alone or in combination with other windows. Custom windows can give a curved appearance to a building or can simply add charm and character to a room.



Special Shapes

k) Storm Windows

Storm windows were very popular before double glazed units came into common use. Storm windows provided a removable double glazing on the exterior or interior of a single glazed window and were an easy way to upgrade the thermal properties without replacing windows. Storm windows are still widely used in the southern US, but are seldom used in Canada.



Storm

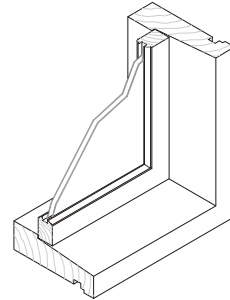
Window Styles

Window Materials

Windows are made from wood, aluminum, PVC, fiberglass, or from a combination of these materials.

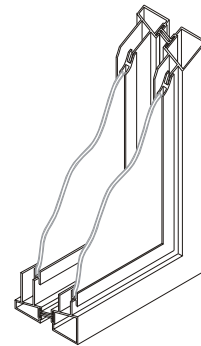
Wood Windows

Wood windows are warm, traditional and aesthetically pleasing. Because it is a good insulator, wood does not become cold like metal and glass. Wood is treated with preservatives to prevent rotting. Wood windows can be painted on the exterior, or clad with aluminum or PVC profiles for better weathering and reduced maintenance.



Aluminum Windows

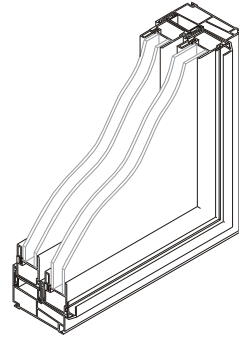
Aluminum windows are more durable than wood, and are thinner, lighter, and easier to handle. But aluminum is a poor insulator and in cold weather, and loses more heat to the exterior than wood. Most recent aluminum windows are manufactured with a thermal break, a vinyl or rubber strip that separates the exterior and interior aluminum parts of the window. The thermal break reduces the movement of cold from the outside to the inside of the building. Most commercial applications still specify aluminum windows.



Window Styles

PVC Windows

PVC windows are relatively new, having only been introduced during the last 25 years. These windows are extruded from high-impact resistant polyvinyl chloride (PVC). PVC windows have excellent weathering characteristics, are almost maintenance-free and have excellent resistance to heat loss. Originally used primarily in renovation because PVC lends itself to non-standard size production, PVC windows are rapidly increasing in the new construction market as well. PVC is available in several extruded colours. Special painted coatings have been developed to expand the range of colours available.



Fiberglass Windows

Fiberglass windows are the latest window products to be developed. The shapes are formed by a special technique called pultrusion, whereby the glass fibers are pulled through dies rather than pushed through an extruder (as PVC is extruded). Fiberglass and PVC lineals look similar at first glance, however, fiberglass is much more rigid than PVC.

