WEB BASED CORE APPLICATION SPECIFIC INSTALLATION INFORMATION AND METHODS

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Window Parts and Styles

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Window Style and Design Choices

Window products are available in a number of styles and shapes. They can slide up or side to side. They can come hinged at the top, side or bottom. They also are available on fixed units to be used as transoms, side lites and picture windows - separately, or joined to gether with operating windows to make functional and attractive groups of windows.

AWNING WINDOW - Double-Hung openings can accommodate a single Awning Window under a Picture Window for an alpine look. Slim design maximizes light and sight while maintaining ventilation, and gives the home a taller, more contemporary look.

BAY WINDOW - Available in Double-Hung or Casement combinations, the Bay Window is a favorite to decorate a home and add the feeling of extra space. Any opening 4-foot or larger is a perfect opportunity.

BOW WINDOW - Gently curving, this unit of Casement Windows gives more possible venting combinations than standard picture window/flanker combinations or Bay Windows.

CASEMENT- Hinged on the side and having one sash, the Casement Window allows lots of glass area and easy cleaning. Not only does the casement open up the room to more air and light, the inward closing action makes a tighter weatherseal the harder the wind blows.

CIRCLE TOP - For that extra touch, the Circle Top with sunburst grid is a perfect choice. For extra-tall openings, the Circle Top can be placed over a matching Double Hung in the same opening.

DOUBLE HUNG WINDOW - The most popular and common window type in most homes. Two sash (upper and lower) both operate and slide vertically to open and close.

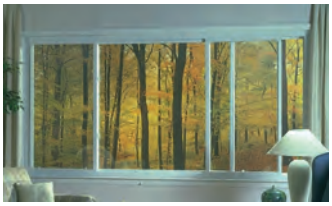
GARDEN WINDOW - Popular, and beautiful, the Garden Window is a perfect addition over the sink in the kitchen, in the family-room, in the den, or anywhere more light and plants will add to the comfort and pleasure in the home.

HOPPER WINDOW - Similar to the Awning Window, the Hopper is hinged horizontally but at the bottom. Makes a perfect basement window replacement.

SINGLE-HUNG WINDOW- Up and down sliding window with the bottom sash operable and the top sash fixed.

ARCHITECTURAL SHAPES - Unique shapes like trapezoids, octagons and triangles allow for architectural design in many window applications.

SLIDING WINDOW- Horizontal sliding windows offer ease of use and large glass areas and are available in multiple panels with one or more operating.



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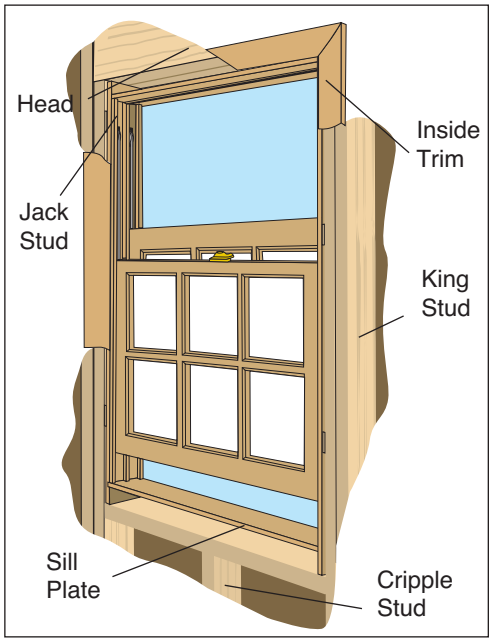
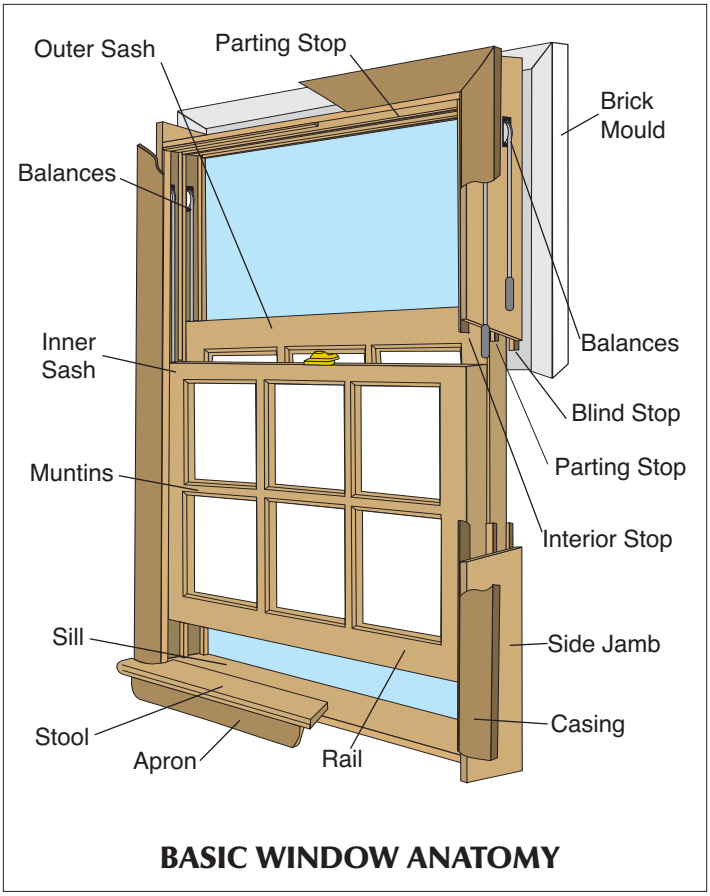
Window Anatomy

The functional parts of old windows are not much different than new windows. Their purpose is to create a barrier between the inside and outside but also be able to open to create ventilation, and give a view of the outside - even when the weather is bad.



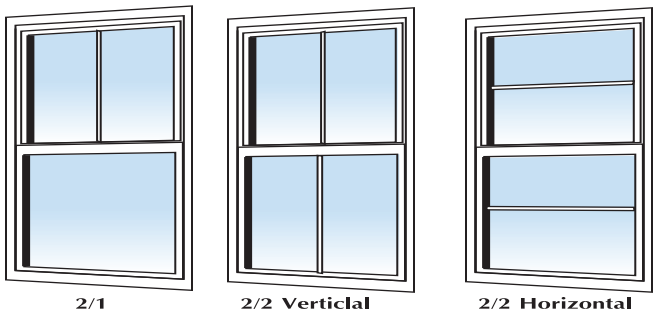
In addition to operating style choices, window glazing can offer decorative grid patterns to enhance any architectural design.

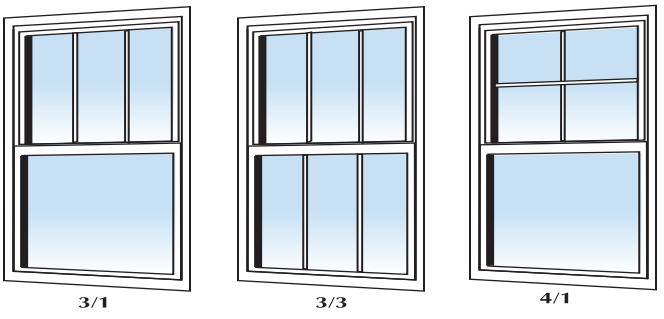


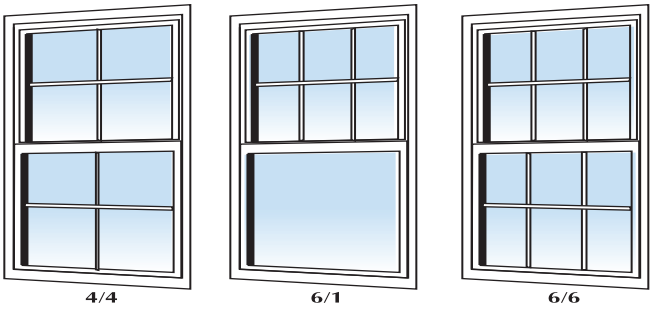
BASIC WINDOW ANATOMY

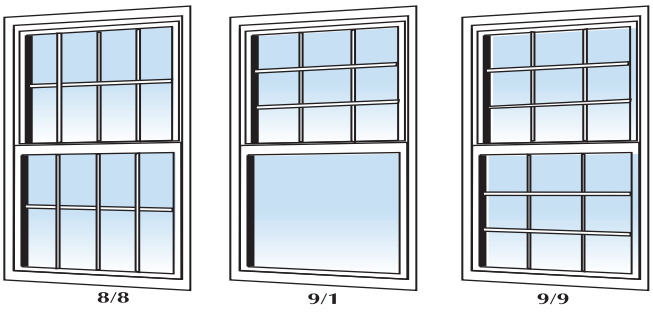
Decorative Grids

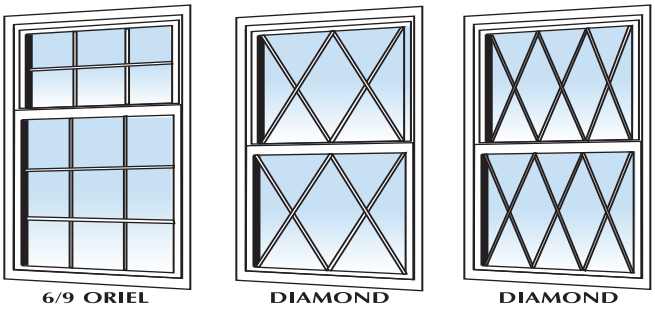
Grid patterns in fenestration products are made from wood or aluminum shapes installed between the panes of the insulated glass - and can be placed on top of the glass. True divided lites (separate panes of glass) are available in higher-end wood windows.











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Most Windows are Mounted in one of 3 Ways

Knowing how old windows are mounted helps because removal is predictable. Knowing which way the old window or door has been installed and fastened will allow proper measurement.

Knowing the right size will establish the size of the cutbacks required to remove the old window or door with minimal disturbance to the old opening, and best possible conditions for a weather resistant install of the new product.

Matching the mounting method or even adapting a different mounting method can be part of the choices that can be made will help create a weather-tight replacement with the minimal disturbance to existing opening - inside and out. Other than steel casements and other older types, there are three basic mounts:

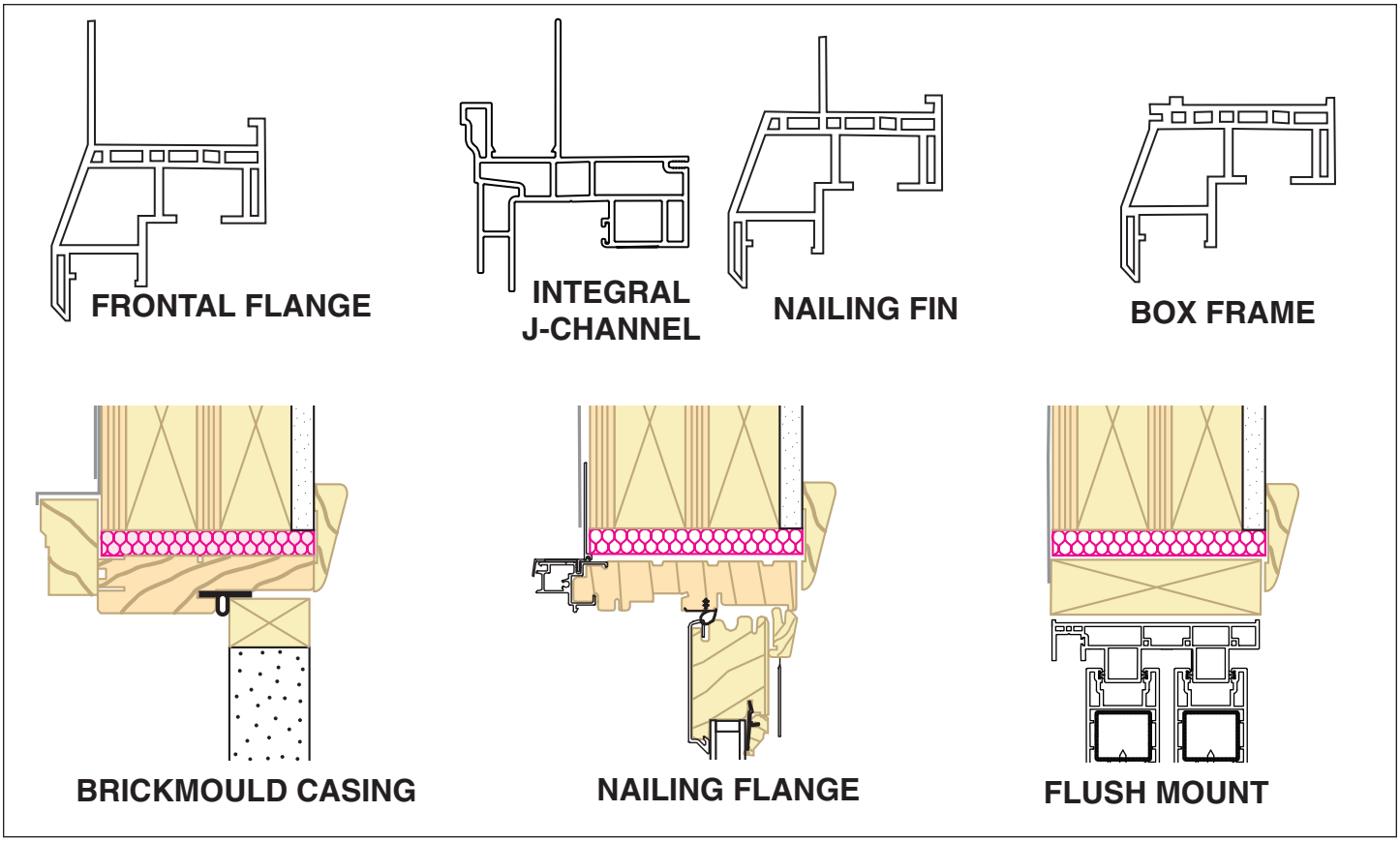
1. A Frontal Flange or Brickmould Trim allows the window or door to be fastened against the outside face of the wall. Often it is in front of the siding, but it can be behind the siding and against the underlying sheathing.

This method requires fastening through the exterior casing/flange or through the window frame into the opening. The frontal flange, sometimes called an unequal leg because the front protudes more than the back, can be as much as 2 inches big and as small as 1/2 inch. The effect is the same.

2, A Recessed Nailing Fin (with or without "J" Channel) allows proper drainage when the siding is placed over the flange. Mounting is accomplished with fasteners through the fin into the exterior wall surface against which the window rests. These nailing fins are usually about 1 inch wide. An integral "J-Channel" can be part of the frame to allow siding to fit behind it creating an effective exterior drainage system.

3. A Flush Frame, or "box frame" that sits within the rough opening and exterior and interior trim "stops" seal the frame and/or provide a surface against which the window or door can rest. This mount requires fastening through the frame into the rough opening.

MOUNTING METHODS



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Window Glossary

When it comes to Replacement Windows or Installing Windows, understanding the terms will help you buy smarter.

Air Leakage Rating: A measure of the rate of infiltration around a window or skylight in the presence of a strong wind. It is expressed in units of cubic feet per minute per square foot (cfm/ft2) of window area or cubic feet per minute per foot (cfm/ft) of window perimeter length. The lower a window's air leakage rating, the better its airtightness.

Conduction: The flow of heat through a solid material, such as glass or wood, and from one material to another in an assembly, such as a window, through direct con-tact.

Convection: The flow of heat through a circulating gas or liquid, such as the air in a room or the air or gas between window-panes.

CRF Rating: The Condensation Resistance Factor is measured in a standard test and reflects the total capability of the window to resist the conditions that support condensation due to conduction and convection of cold, and air infiltration. Industry standards call for a minimum CRF of 35. The higher the CRF rating, the better the window's resistance to condensation producing conditions.

Fenestration: A window or skylight and its associated interior or exterior elements, such as shades or blinds. The placement of window openings in a building wall is one of the important elements in determining the exterior appearance of a building.

Gas Fill: A gas other than air placed between window or skylight glazing panes to reduce the U-factor by suppressing conduction and convection.

Glazing: The glass or plastic panes in a window or skylight.

Infiltration: The inadvertent flow of air into a building through breaks in the exterior surfaces of the building. It can occur through joints and cracks around window and skylight frames, sash, and glazings.

Low-Emittance (Low-E) Coating: Microscopically thin, virtually invisible, metal or metallic oxide layers deposited on a window or skylight glazing surface, primarily to reduce the U-factor by suppressing radiative heat flow through the window or skylight.

Radiation: The transfer of heat in the form of electromagnetic waves from one separate surface to another. Energy from the sun reaches the earth by radiation, and a person's body can lose heat to a cold window or skylight surface in a similar way.

R-Value: A measure of the resistance of a material or assembly to heat flow. It is the inverse of the U-factor (R = 1/U) and is expressed in units of hr-ft 2 -°F/Btu. A high window R-value, has a greater resistance to heat flow and a higher insulating value.

Shading Coefficient (SC): A measure of the ability of a window or skylight to transmit solar heat, relative to that ability for 1/8-inch clear, double-strength, single glass. It is equal to the Solar Heat Gain Coefficient multiplied by 1.15 and is expressed as a number without units between 0 and 1. A window with a lower Shading Coefficient transmits less solar heat, and provides better shading.

Solar Heat Gain Coefficient (SHGC): The fraction of solar radiation admitted through a window or skylight, both directly transmitted, and absorbed and subsequently released inward. The Solar Heat Gain Coefficient has replaced the Shading Coefficient as the standard indicator of a window's shading ability. It is expressed as a number without units between 0 and 1. A window with a lower Solar Heat Gain Coefficient transmits less solar heat, and provides better shading. Spectrally Selective Glazing: A specially engineered low-E coated or tinted glazing that blocks out much of the sun's heat while transmitting substantial daylight.

U-Factor (U-Value): A measure of the rate of heat flow through a material or assembly. It is expressed in units of Btu/hr-ft 2 -°F or W/m 2 -°C. Window manufacturers and engineers commonly use the U-factor to describe the rate of non-solar heat loss or gain through a window or skylight. Lower window U-factors have greater resistance to heat flow and better insulating value.

Visible Transmittance: The percentage or fraction of visible light transmitted by a window or skylight.

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