



Windows



This brochure provides general information about Building Code requirements for one- and two-family dwellings (single-family homes, duplexes, townhouses, and detached accessory dwelling units). As the owner of a one- and two-family dwelling, you can hire a licensed contractor to get the proper permits and complete the work, or in most cases, you can obtain permits and do the work yourself. Window requirements for multi-unit/commercial properties can be found in the Oregon Structural Specialty Code. You can view Oregon Building Codes online at www.oregon.gov/BCD/. Windows are required to provide light and ventilation for your home, and serve as an emergency escape route in case of a fire. This publication provides information about permit and code requirements for window installation. In some areas of the City, zoning code design standards may regulate the style of windows you may place in your home. Please contact zoning staff at 503-823-7526 to see if your project is affected by design standards.

CITY OF PORTLAND, OREGON - BUREAU OF DEVELOPMENT SERVICES
1900 SW 4th Avenue, Portland, Oregon 97201 • 503-823-7300 • www.portlandoregon.gov/bds

When is a permit needed?

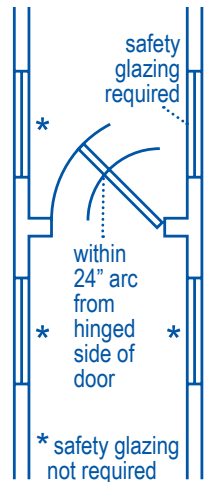
When is a permit needed?	Required	Not Required
Adding a new window where one did not previously exist	X	
Replacing and widening a window	X	
Replacing a window with no change to the header size or location, and no reduction of the clear opening size		X
Installing or removing storm windows		X

Note: Land Use Reviews may be required if the property is in a design zone or historic zone.

Glass

Safety glass that has been tested and labeled, such as tempered glass, is required in windows in the following locations:

- Windows that are both within 24 inches of a door in a closed position and within 60 inches of the floor.
- Windows on a wall perpendicular to the plane of the door in a closed position and within a 24 inch arc of the hinged side in the direction of swing and within 60 inches of the door. *See the illustration to the right.*
- Windows in enclosures for bathtubs, showers, hot tubs, whirlpools, saunas and steam rooms where the glass is within 60 inches above the standing surface. Safety glass is not required when there is intervening wall within the 60" horizontal distance. The horizontal distance should be measured in straight line from the water's edge.
- Windows with a pane larger than nine square feet, having a bottom edge closer than 18 inches to the floor and a top edge higher than 36 inches above the floor and that are within 36 inches of a walking surface. This window must meet all 4 items to be required to be safety glazing.
- Windows that are within 36 inches horizontally to stairways, landings or ramps and less than 60 inches above the walking surface or any stair tread.
- Glazing adjacent to the landing at the bottom of a stairway where the glazing is less than 36 inches above the landing and within a horizontal arc less than 180 degrees from the bottom tread nosing shall be considered a hazardous location.



Replacement windows located in any of the places mentioned above must meet the safety glass requirements.

Energy conservation

Energy conservation requirements are applied to your whole house as a package. The windows that may be used in a new house depend on how well the home is insulated.

- New windows list an energy conservation rating indicated by a U-factor. The lower the U-factor, the better the window is at conserving energy.
- New windows installed in an addition to an existing residence shall have a U-factor of 0.35 or less.
- Replacement windows installed in an existing house shall have a U-factor of 0.40 or less.
- Replacement windows may have a U-factor of 0.65 or less where necessary to retain the architectural consistency with remaining windows in the building.
- Decorative or unique architectural feature windows not exceeding one percent of the heated floor area may be exempt from the energy code.



Windows For Your Home

National Fenestration Rating Council (NFRC) CERTIFIED

Vinyl-Clad Wood Frame
Double Glazing - Argon Fill - Low E
Product Type: Vertical Slider

ENERGY PERFORMANCE RATINGS	
U-Factor (U.S./I-P)	Solar Heat Gain Coefficient
0.35	0.32
ADDITIONAL PERFORMANCE RATINGS	
Visible Transmittance	Air Leakage (U.S./I-P)
0.51	0.2
Condensation Resistance	
51	

Manufacturer equates these ratings, confirm to applicable NFRC procedures for determining window product performance. NFRC ratings are determined for a best set of environmental conditions and a specific product size. Consult manufacturer's literature for other product performance information. www.nfrc.org



Stylish dual-pane windows not only add natural light and open for ventilation, but also save energy by adding winter warmth and keeping your home's interior cooler in summer temperatures.

High efficiency rated windows make your home greener by making the most of natural resources for light and air.



Emergency egress windows

Basements and all sleeping rooms must have at least one opening window or exterior door for escape or rescue, also referred to as egress, in case of a fire or other emergency.

- Emergency egress windows and doors must open directly into a public way, or to a yard or court that opens to a public way. Note: porch/roof covers of egress windows cannot be enclosed because they would impede an egress route directly to the yard.
- You must be able to open the emergency egress window or door from the inside without a key, special knowledge, or any separate tool.
- The bottom of an egress window's clear opening cannot be higher than 44 inches above the finished floor. Alternative standards may apply to existing windows when the space is converted to finished area. See Brochure #9, www.portlandoregon.gov/bds/article/93019.
- When the window is fully open, the opening must be at least 5.7 square feet in area. An open area of five square feet is allowed at egress windows at the grade floor and at basements where the bottom of the window well is not more than 44 inches below the ground. Existing sleeping room windows may remain if the room was legally permitted as a bedroom previously and if the windows meet the historical code requirements in effect at the time that the bedroom was originally permitted. Information about historical code requirements can be found at www.portlandoregon.gov/bds/article/518138.
- The width of the egress opening must measure at least 20 inches. The height must measure at least 24 inches.

A window opening with the minimum width and the minimum height will not meet the minimum area requirement. For example, a window having a minimum width of 20 inches must be 36 inches high to provide five square feet and 41 inches high to provide 5.7 square feet. Or, a window with a minimum height of 24 inches must be 30 inches wide to provide five square feet or 34.5 inches wide to provide 5.7 square feet.

Light and ventilation

Any room used for sleeping, living, cooking or dining purposes must have light and ventilation. Light and ventilation requirements may be met naturally, without mechanical equipment and/or permanent artificial light, through the use of operable windows, doors or skylights.

- To meet the natural ventilation requirements, windows, doors and skylights must open to the outside. The total open area must measure at least 4 percent of the floor area of a room. Existing conditions may allow for reduced requirements or mechanical ventilation may be provided.

Window wells

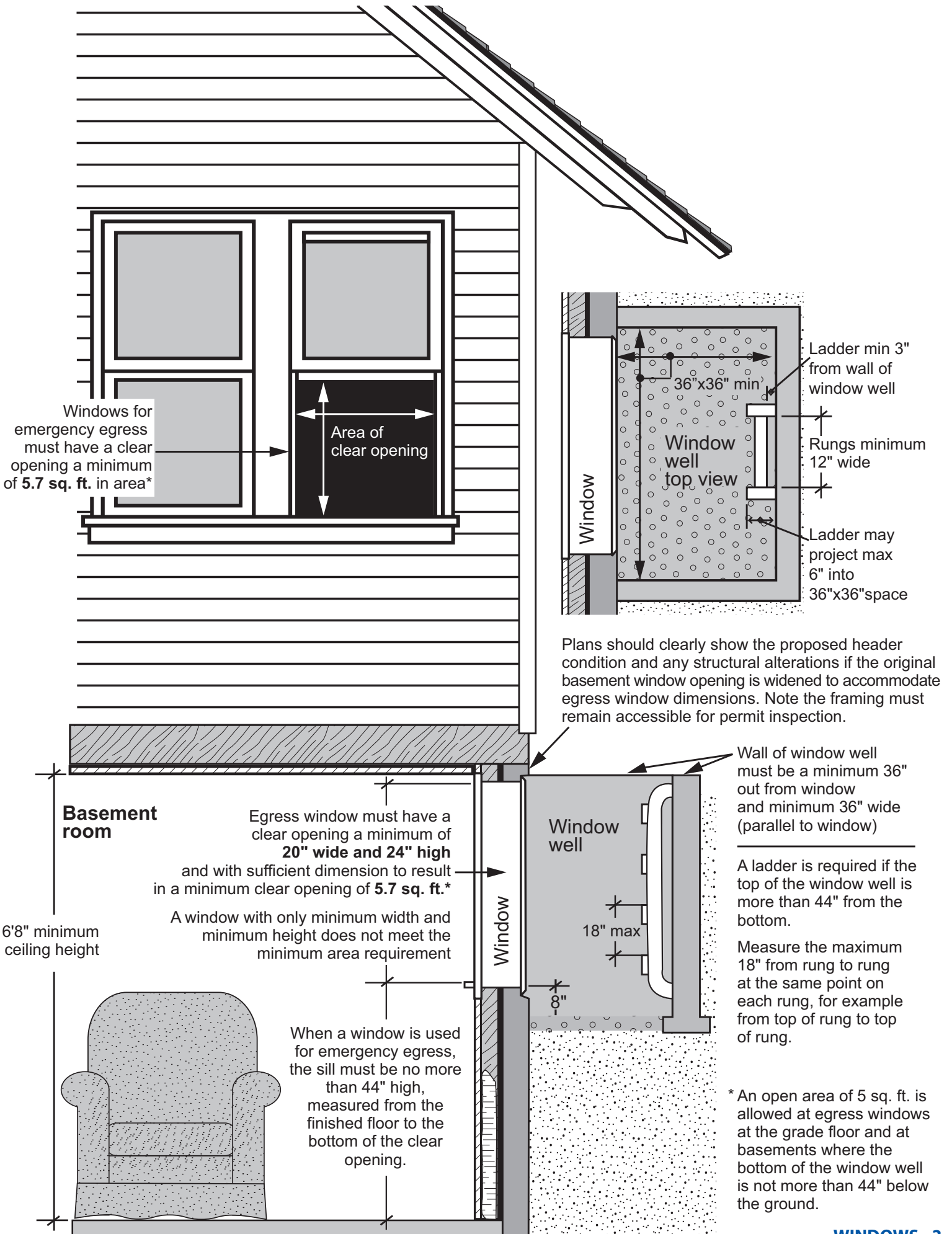
If the bottom of your window is below the adjacent ground, as in basement windows, you will need to excavate for a window well. Depending on the height, you may be able to use a pre-manufactured corrugated metal window well. Or, the window well may be constructed of materials such as concrete, concrete block or pressure treated lumber.

- The window must be able to open completely inside of the window well.
- Inside the window well there must be a clear space in front of the window opening that is at least 36" x 36".
- If the bottom of the window well is more than 44 inches below the top of the well, a permanently attached ladder or steps must be used. Steps in a window well do not need to meet the code requirements for stairs. The ladder or stairs may project 6 inches into the 36" x 36" clear space required for window wells but cannot restrict the window opening.
- A ladder must have rungs that are at least 12 inches wide. Rungs must be spaced so that they are measured a maximum 18 inches from rung to rung at the same point on each rung. The ladder must be attached to the window well so that there is at least 3 inches between the wall of the window well and the ladder. The ladder must extend all the way from the bottom of the window well to the top of the well.
- Any grill, cover or other obstruction over a window well, needs to be easily removable from the inside without the use of a key, tool or special knowledge. The opening size of the grill, cover or other obstruction must be at least 5.7 square feet clear.

Fall prevention

Depending on the height of a window above the ground and the floor, windows may need to have limited opening sizes to prevent persons from falling through.

- Portions of windows that are less than 24 inches above the floor and more than 72 inches above the outside ground or surface below must not allow a 4-inch diameter sphere to pass through when the window is in its largest opened position.
- A railing attached across the front of a window with restricted openings as described above may be installed to provide the fall protection.
- Fall prevention window opening restrictions may not reduce the minimum net clear opening of required egress windows.
- Note that any fall prevention devices installed on egress windows must be identified as being in compliance with ASTM F2090 standard. Specific requirements can be found in the Oregon Specialty Code, section R612.2-612.3. View Oregon Building Codes online at www.oregon.gov/BCD/.



Good to know

- The **5.7 square feet of clear opening** required for an emergency egress window is based on the space necessary for a fully equipped fire fighter wearing oxygen tanks to gain entry in the event of an emergency, and to allow an occupant to escape.
- **U-factor** is a measure of how well heat is transferred by the entire window assembly, either into or out of the building. The insulating value is indicated by the R-value which is the inverse of the U-factor. The lower the U-factor, the greater a window's resistance to heat flow and the better its insulating value.
- **Solar Heat Gain Coefficient** measures how well a window blocks heat caused by sunlight. The lower a window's solar heat gain coefficient, the less solar heat it transmits.
- **Visible Transmittance** measures how much visible light comes through a window. The higher the VT, the more light is transmitted.
- **Air Leakage** is indicated by an air leakage rating expressed as the equivalent cubic feet of air passing through a square foot of window area (cfm/sq. ft.). Heat loss and gain occur by infiltration through cracks in the window assembly.
- **Condensation Resistance** measures the ability of a window to resist the formation of condensation on the interior surface. The higher the CR rating, the better it is at resisting condensation formation.
- If you have any questions or concerns about your project, check with staff in the DSC about zoning and building requirements.

For more detailed information regarding the bureau's hours of operation and available services;

Visit our Web site
www.portlandoregon.gov/bds

Helpful Information

Bureau of Development Services

City of Portland, Oregon
1900 SW 4th Avenue, Portland, OR 97201
www.portlandoregon.gov/bds

General Office Hours:

Monday through Friday, 8:00 am to 5:00 pm
BDS main number: 503-823-7300

Permit Information is available at the following location:

DSC (First Floor)
For Hours Call 503-823-7310
or visit www.portlandoregon.gov/bds

Permitting Services (Second Floor)
For Hours Call 503-823-7310
or visit www.portlandoregon.gov/bds

Important Telephone Numbers

DSC automated information line	503-823-7310
Building code information	503-823-1456
Planning and Zoning information	503-823-7526
Permit information for electrical, mechanical, plumbing, sewer and sign.....	503-823-7363
Permitting process information.....	503-823-7357
Permit resources and records.....	503-823-7660
BDS 24-hour inspection request line requires IVR number and three digit type of inspection code	503-823-7000
Residential information for one and two family dwellings.....	503-823-7388
City of Portland TTY	503-823-6868

Other sources of information to help you

For additional information check out our publications in the DSC and on our Web site. Titles of interest include: Guide to Permits and Inspections for One and Two Family Dwellings, Windows, Stairs and others.

Scheduling an inspection

Call 503-823-7000, the BDS 24 hour inspection request line

Enter your IVR or permit number

Enter the three-digit inspection code for the type of inspection you are requesting

Enter a phone number where you can be reached during weekdays and if you want the inspection in the morning or afternoon

There must be an adult over age 18 to let the inspector inside

All information in this publication is subject to change.