



# ENERGY STAR® Program Requirements for Residential Windows, Doors, and Skylights

## Partner Commitments

Following are the terms of the ENERGY STAR Partnership Agreement as it pertains to the manufacture and labeling of ENERGY STAR qualified products. The ENERGY STAR Partner must adhere to the following partner commitments:

### Qualifying Products

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1. Comply with current ENERGY STAR Eligibility Criteria, which define performance requirements and test procedures for residential windows, doors, and skylights. A list of eligible products and their corresponding Eligibility Criteria can be found at [www.energystar.gov/specifications](http://www.energystar.gov/specifications).
2. **Prior to associating the ENERGY STAR name or mark with any product**, obtain certification from National Fenestration Rating Council (NFRC), a Certification Body recognized by EPA for residential windows, doors, and skylights. As part of this certification process, products must be tested in a laboratory recognized by EPA to perform residential windows, doors, and skylight testing. A list of EPA-recognized laboratories and Certification Bodies can be found at [www.energystar.gov/testingandverification](http://www.energystar.gov/testingandverification).

### Using the ENERGY STAR Name and Marks

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3. Comply with current ENERGY STAR Identity Guidelines, which define how the ENERGY STAR name and marks may be used. Partner is responsible for adhering to these guidelines and ensuring that its authorized representatives, such as advertising agencies, dealers, and distributors, are also in compliance. The ENERGY STAR Identity Guidelines are available at [www.energystar.gov/logouse](http://www.energystar.gov/logouse).
4. Use the ENERGY STAR name and marks only in association with qualified products. Partner may not refer to itself as an ENERGY STAR Partner unless at least one product is qualified and offered for sale in the U.S. and/or ENERGY STAR partner countries.
5. Provide clear and consistent labeling of ENERGY STAR qualified residential windows, doors, and skylights.
  - 5.1. The ENERGY STAR mark must be clearly displayed in product literature (i.e., spec sheets, catalogs, etc.), and on the manufacturer's website where information about ENERGY STAR qualified models is displayed.
  - 5.2. Partner may also use the Spine Label on product packaging.
  - 5.3. Partner shall adhere to the following product-specific commitments regarding use of the ENERGY STAR mark on qualified products:
    - 5.3.1. All qualified windows, doors, and skylights must display the Product Qualification Label in accordance with the Partner Requirements and Resource Guidelines for Manufacturers.
    - 5.3.2. ALL display units for qualified products must display the Display Unit Label.
    - 5.3.3. Components may not carry an ENERGY STAR mark or label.

### Verifying Ongoing Product Qualification

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6. Participate in third-party verification testing through National Fenestration Rating Council (NFRC), a Certification Body recognized by EPA for windows, doors, and skylights, as soon as the program (also

known as blind purchase) is implemented, providing full cooperation and timely responses. EPA/DOE may also, at its discretion, conduct tests on products that are referred to as ENERGY STAR qualified. These products may be obtained on the open market, or voluntarily supplied by Partner at the government's request.

### **Providing Information to EPA**

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7. Cooperate with market assessment research completed by Drucker Research on behalf of American Architectural Manufacturers Association, and the Window and Door Manufacturers Association.
8. Report to EPA any attempts by recognized laboratories or Certification Bodies (CBs) to influence testing or certification results or to engage in discriminatory practices.
9. Notify EPA of a change in the designated responsible party or contacts within 30 days using the My ENERGY STAR Account tool (MESA) available at [www.energystar.gov/mesa](http://www.energystar.gov/mesa).

### **Performance for Special Distinction**

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In order to receive additional recognition and/or support from EPA for its efforts within the Partnership, the ENERGY STAR Partner may consider the following voluntary measures, and should keep EPA informed on the progress of these efforts:

- Provide quarterly, written updates to EPA as to the efforts undertaken by Partner to increase availability of ENERGY STAR qualified products, and to promote awareness of ENERGY STAR and its message.
- Consider energy efficiency improvements in company facilities and pursue benchmarking buildings through the ENERGY STAR Buildings program.
- Purchase ENERGY STAR qualified products. Revise the company purchasing or procurement specifications to include ENERGY STAR. Provide procurement officials' contact information to EPA for periodic updates and coordination. Circulate general ENERGY STAR qualified product information to employees for use when purchasing products for their homes.
- Feature the ENERGY STAR mark(s) on Partner website and other promotional materials. If information concerning ENERGY STAR is provided on the Partner website as specified by the ENERGY STAR Web Linking Policy (available in the Partner Resources section of the ENERGY STAR website), EPA may provide links where appropriate to the Partner website.
- Ensure the power management feature is enabled on all ENERGY STAR qualified displays and computers in use in company facilities, particularly upon installation and after service is performed.
- Provide general information about the ENERGY STAR program to employees whose jobs are relevant to the development, marketing, sales, and service of current ENERGY STAR qualified products.
- Provide a simple plan to EPA outlining specific measures Partner plans to undertake beyond the program requirements listed above. By doing so, EPA may be able to coordinate, and communicate Partner's activities, provide an EPA representative, or include news about the event in the ENERGY STAR newsletter, on the ENERGY STAR website, etc. The plan may be as simple as providing a list of planned activities or milestones of which Partner would like EPA to be aware. For example, activities may include: (1) increasing the availability of ENERGY STAR qualified products by converting the entire product line within two years to meet ENERGY STAR guidelines; (2) demonstrating the economic and environmental benefits of energy efficiency through special in-store displays twice a year; (3) providing information to users (via the website and user's manual) about energy-saving features and operating characteristics of ENERGY STAR qualified products; and (4) building awareness of the ENERGY STAR Partnership and brand identity by collaborating with EPA on one print advertorial and one live press event.
- Join EPA's SmartWay Transport Partnership to improve the environmental performance of the company's shipping operations. The SmartWay Transport Partnership works with freight carriers, shippers, and other stakeholders in the goods movement industry to reduce fuel consumption,

greenhouse gases, and air pollution. For more information on SmartWay, visit [www.epa.gov/smartway](http://www.epa.gov/smartway).

- Join EPA's Green Power Partnership. EPA's Green Power Partnership encourages organizations to buy green power as a way to reduce the environmental impacts associated with traditional fossil fuel-based electricity use. The partnership includes a diverse set of organizations including Fortune 500 companies, small and medium businesses, government institutions as well as a growing number of colleges and universities. For more information on Green Power, visit [www.epa.gov/greenpower](http://www.epa.gov/greenpower).



## ENERGY STAR<sup>®</sup> Eligibility Criteria for Residential Windows, Doors, and Skylights

Below are the product criteria for ENERGY STAR qualified residential windows, doors, and skylights. A product must meet all of the identified criteria to be labeled as ENERGY STAR qualified by its manufacturer.

### 1) **Definitions:**

- A. **Window:** An assembled unit consisting of a frame/sash component holding one or more pieces of glazing functioning to admit light and/or air into an enclosure and designed for a vertical installation in an external wall of a residential building.
- B. **Door:** A sliding or swinging entry door system designed for and installed in a vertical wall separating conditioned and unconditioned space in a residential building. ENERGY STAR recognizes three categories of doors:
  - i) **Opaque:** A door with no glazing.
  - ii) **≤ ½-lite:** A door with ≤ 29.8 percent glazing (based on NFRC 100-2004 or the most recent procedure available from NFRC). Includes ¼- and ½-lite doors.
  - iii) **> ½-lite:** A door with > 29.8 percent glazing (based on NFRC 100-2004 or the most recent procedure available from NFRC). Includes ¾-lite and fully glazed doors.
- C. **Skylight:** A window designed for sloped or horizontal application in the roof of a residential building, the primary purpose of which is to provide daylighting and/or ventilation. May be fixed or operable. Skylights have their own set of ENERGY STAR criteria. Tubular Daylighting Devices are included under the skylight criteria.
- D. **Sliding Entry Door:** A door that contains one or more manually operated panels that slide horizontally within a common frame. Sliding doors are included under the door criteria and definition.
- E. **Swinging Entry Door:** A door system having, at a minimum, a hinge attachment of any type between a leaf and jamb, mullion, or edge of another leaf or having a single, fixed vertical axis about which the leaf rotates between open and closed positions. Swinging entry doors are included under the door criteria and definition.
- F. **Tubular Daylighting Device (TDD) or tubular skylight:** A non-operable device primarily designed to transmit daylight from a roof surface of a residential building to an interior ceiling surface via a tubular conduit. The device consists of an exterior glazed weathering surface, a light transmitting tube with a reflective inside surface and an interior sealing device, such as a translucent ceiling panel. TDDs are included under the skylight criteria.
- G. **Dynamic Glazing Product:** Any fenestration product that has the fully reversible ability to change its performance properties, including U-factor, SHGC, or Visual Transmittance. This includes, but is not limited to, shading systems between the glazing layers and chromogenic glazing.
  - i) **Switch-able Glazing Product:** An electrochromic glass system that can be tinted or untinted in response to an electronic control signal or environmental change.
  - ii) **Internal Shading System:** A fenestration product that includes blinds or shades positioned between glass panes that can open or close.
- H. **Window, door, and skylight components:** Components used by an ENERGY STAR partner in the construction of an ENERGY STAR qualified window, door, or skylight including, but not limited to, coated glass, frame profiles, and warm-edge spacers.
- I. **Residential Building:** A structure used primarily for living and sleeping that is zoned as residential and/or subject to residential building codes. For the purposes of ENERGY STAR, “residential building” refers to buildings that are three stories or less in height.
- J. **Insulating Glass (IG) Unit:** A preassembled unit, comprising lites of glass, which are sealed at the edges and separated by dehydrated space(s). The unit is used in glazed fenestration products.
- K. **Private labeler:** A company that has joined the NFRC private labeler program in order to market under its own name windows, doors, or skylights manufactured by a different company.
- L. **U-Factor:** The heat transfer per time per area and per degree of temperature difference. The U-factor multiplied by the interior-exterior temperature difference and by the projected fenestration product area yields the total heat transfer through the fenestration product due to conduction, convection, and long wave infra-red radiation. Expressed here in units of Btu/h·ft<sup>2</sup>·°F.

- M. **Solar Heat Gain Coefficient (SHGC):** The ratio of the solar heat gain entering the space through the fenestration product to the incident solar radiation. Expressed as a value between 0 and 1.
  - N. **National Fenestration Rating Council (NFRC):** NFRC provides product and energy performance data for windows, doors and skylights.
  - O. **NFRC 2004 Procedures:** Product testing and simulation procedures officially released by NFRC in 2004.
  - P. **ENERGY STAR Climate Zone:** See ENERGY STAR Climate Zone Map on page 5. A complete list of ENERGY STAR Climate Zones by state and county or, where applicable, zip code will be available from DOE or its contractor.
- 2) **Eligible Products:** Windows, doors, skylights, and dynamic glazing products (while in the minimum tinted state for switch-able glazing products or the full "OPEN" position for internal shading systems) for residential applications that appear in the NFRC CPD, meet the definitions specified above, and meet the testing, certification, and ENERGY STAR criteria specified on the next page.
  - 3) **Testing and Certification Criteria:** The performance of windows, doors, and skylights must be independently tested and certified in accordance with National Fenestration Rating Council (NFRC) procedures for U-Factor (NFRC 100) and Solar Heat Gain Coefficient (NFRC 200). All products containing insulating glass (IG) units must have them certified according to NFRC procedures when such procedures are established. TDDs must meet the skylight U-factor criteria using U-factor ratings certified under the NFRC computer simulation procedure.
  - 4) **Effective Date:** The effective date of this version of the Program Requirements, Version 5.0, is January 4, 2010, and supersedes all previous versions.
  - 5) **Future Criteria Revisions:** ENERGY STAR reserves the right to change the specification should technological and/or market changes affect its usefulness to consumers, industry, or the environment. Keeping with current policy, industry/stakeholder discussions determine revisions to the criteria.
  - 6) **ENERGY STAR Criteria:** To qualify for ENERGY STAR, products must have NFRC certified U-Factor and, where applicable, Solar Heat Gain Coefficient (SHGC) ratings at levels which meet or exceed the minimum qualification criteria specified in the table on the following page. Windows and skylights must meet the criteria for a given ENERGY STAR Climate Zone. Window, door, and skylight products must be rated under the NFRC 2004 procedures or the most recent procedures available from NFRC.
  - 7) **Equivalent Energy Performance:** Allows windows and sliding doors with energy performance equivalent to the prescriptive criteria to qualify in the Northern climate zones. Equivalent performance criteria are not applicable to the North-Central, South-Central, or Southern climate zones or to swinging entry doors or skylights.

# ENERGY STAR® Qualification Criteria for Residential Windows, Doors, and Skylights

## Windows

Climate Zone	U-Factor <sup>1</sup>	SHGC <sup>2</sup>	
Northern	≤ 0.30	Any	Prescriptive
	≤ 0.31	≥ 0.35	Equivalent Energy Performance
	≤ 0.32	≥ 0.40	
North-Central	≤ 0.32	≤ 0.40	
South-Central	≤ 0.35	≤ 0.30	
Southern	≤ 0.60	≤ 0.27	

## Doors

Glazing Level	U-Factor <sup>1</sup>	SHGC <sup>2</sup>
Opaque	≤ 0.21	No Rating
≤ ½-Lite	≤ 0.27	≤ 0.30
> ½-Lite	≤ 0.32	≤ 0.30

## Skylights

Climate Zone	U-Factor <sup>1</sup>	SHGC <sup>2</sup>
Northern	≤ 0.55	Any
North-Central	≤ 0.55	≤ 0.40
South-Central	≤ 0.57	≤ 0.30
Southern	≤ 0.70	≤ 0.30

<sup>1</sup> Btu/h-ft<sup>2</sup>-°F

<sup>2</sup> Fraction of incident solar radiation

