



ENERGY STAR®

Program Requirements for Residential Windows, Doors, and Skylights— Version 4.0

FINAL VERSION: 5/14/2007

Partner Commitments

Eligible Organizations:

- Manufacturers (and private labelers) of Windows, Doors, and Skylights for Residential Applications;
- Manufacturers of Residential Window, Door, and Skylight Components

Commitment

The following are the terms of the ENERGY STAR Partnership Agreement as it pertains to the manufacturing and marketing of ENERGY STAR qualified windows, doors, and skylights. The ENERGY STAR PARTNER must adhere to the following program requirements:

- Comply with the current ENERGY STAR Eligibility Criteria defining the requirements that must be met for use of the ENERGY STAR on windows, doors, and skylights and specifying the NFRC certification requirement for windows, doors, and skylights. The U.S. Department of Energy (DOE) may, 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 DOE's request;
- Comply with current [ENERGY STAR Identity Guidelines](#), [ENERGY STAR Display Unit Labeling Guidelines for Manufacturers and Retailers](#), [ENERGY STAR Marks, Maps, and Messaging: Simplified Marketing Guidelines for Partners](#), and other guidelines specific to the program area. These guidelines describe how the ENERGY STAR name, marks, and labels may be used. PARTNER is responsible for adhering to these guidelines and for ensuring that its authorized representatives, such as advertising agencies, dealers, and distributors are also in compliance;
- Offer at least one ENERGY STAR qualified window, door, or skylight model or manufacture components that are used in the construction of qualified windows, doors, or skylights before activating this agreement. When PARTNER labels the product, it must meet the specification in effect at that time;
- Provide clear and consistent labeling of ENERGY STAR qualified windows, doors, and skylights and display units for these products. The ENERGY STAR for Windows, Doors, and Skylights Product Qualification Label must be clearly displayed on qualified windows, doors, and skylights. Display units must display the ENERGY STAR for Windows, Doors, and Skylights Display Unit Label. The appropriate ENERGY STAR mark must be clearly displayed on the manufacturer's Internet site and in product literature (i.e., catalogues, user manuals, spec sheets, etc.) where information about ENERGY STAR qualified models is displayed;
- Provide a [Qualified Product Information form \(QPI\)](#), preferably in electronic format. Once PARTNER submits its QPI form and DOE signs PARTNER's Partnership Agreement, PARTNER's company name will be listed as an ENERGY STAR PARTNER. PARTNER is responsible for submitting a new QPI form as needed to update its account profile with ENERGY STAR;
- Notify DOE of a change in the designated responsible party or contacts for windows, doors, and skylights within 30 days.

Performance for Special Distinction

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

- May provide to DOE or its contractor for ENERGY STAR for Windows, Doors, and Skylights, on an annual basis, unit shipment data to assist in determining the market penetration of ENERGY STAR qualified windows, doors, and skylights. Specifically, PARTNER may submit the total number of ENERGY STAR qualified units shipped and the total number of units shipped to U.S. destinations broken down by product category (window, entry door, skylight, patio door) and state or regions specified by DOE.

The data for each calendar year may be submitted to DOE or its contractor, in electronic format, no later than March 31 of the following year and may be provided directly by PARTNER or through a third party. Data submitted to the DOE contractor for ENERGY STAR for Windows, Doors, and Skylights will be aggregated before it is transferred to DOE. The data will be used by DOE only for program evaluation purposes and will be closely controlled. If requested under the Freedom of Information Act (FOIA), DOE will argue that the data is exempt. Any information used will be masked by DOE so as to protect the confidentiality of PARTNER.

- Consider energy efficiency improvements in company facilities and pursue to benchmark their 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 DOE for periodic updates and coordination. Circulate general ENERGY STAR qualified product information to employees for use when purchasing products for their homes;
- Ensure the power management feature is enabled on all ENERGY STAR qualified monitors 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 product models;
- Feature the ENERGY STAR mark(s) on PARTNER web site and in other promotional materials. If information concerning ENERGY STAR is provided on PARTNER web site, DOE may provide links where appropriate to PARTNER web site;
- Provide a simple plan to DOE outlining specific measures PARTNER plans to undertake beyond the program requirements listed above. By doing so, DOE may be able to coordinate, communicate, and/or promote PARTNER's activities, provide a DOE representative, or include news about the event in the ENERGY STAR newsletter, on the ENERGY STAR web pages, etc. The plan may be as simple as providing a list of planned activities or planned milestones for which PARTNER would like DOE to be aware. For example, activities may include:
 - (1) Increase the availability of ENERGY STAR qualified products by converting the entire product line within two years to meet ENERGY STAR guidelines;
 - (2) Demonstrate the economic and environmental benefits of energy efficiency through special in-store displays twice a year;
 - (3) Provide information to users (via the web site and user's manual) about energy-saving features and operating characteristics of ENERGY STAR qualified products, and
 - (4) Build awareness of the ENERGY STAR Partnership and brand identity by collaborating with DOE on one print advertorial and one live press event;
- Provide quarterly, written updates to DOE 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.



ENERGY STAR[®] Eligibility Criteria for Residential Windows, Doors, and Skylights

Below are the product criteria for ENERGY STAR qualified 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 entire glazed unit designed for a vertical installation in an external wall of a residential building to allow for views and natural daylighting. May be fixed or operable.
- b) Door: A residential entry or patio door system including door leaf, frame, and lites, where applicable.
- c) Skylight: An entire glazed unit designed for a sloped or horizontal application in the roof of a residential building to allow for natural daylighting. May be fixed or operable.
- d) Entry door: An exterior door other than glass doors.
- e) Patio door: A hinged or sliding glass door.
- f) Tubular daylighting device (tubular skylight): A device consisting of a glazed entrance aperture, a reflective cylindrical light pipe, and a glazed exit aperture installed in the roof of a residential building to allow for natural daylighting.
- 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 electronic or electrochemical switch-able glass coatings or constructions.
 - 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 in the construction of a qualified window, door, or skylight including, but not limited to, coated glass, frame profiles, and warm edge spacers.
- i) Private labeler: A company that markets under its own name windows, doors, or skylights manufactured by a different company that is an ENERGY STAR Windows, Doors, and Skylights PARTNER.
- j) U-Factor: The rate of non-solar heat loss or gain through a material or assembly. Expressed here in units of Btu/h·ft²·°F.
- k) Solar Heat Gain Coefficient (SHGC): The fraction of solar radiation admitted through a window, door, or skylight. Expressed as a value between 0 and 1.
- l) NFRC 1997 Procedures: Product testing and simulation procedures officially released by NFRC in 1997, which provided residential and commercial ratings for each product based on two distinct product test sizes.
- m) NFRC 2001 Procedures: Product testing and simulation procedures officially released by NFRC in 2001, which provide ratings of products and specify a single standard test size for each product type.
- n) NFRC 2004 Procedures: New product testing and simulation procedures officially released by NFRC in 2004, which combines and replaces NFRC 2001 procedures to provide more accurate ratings.
- o) RES97 rated at 90 degrees: NFRC 100 1997 procedures rated skylights at a 90-degree angle, generating a lower reported U-Factor than the same skylight rated under the NFRC 2001 procedures. RES97 rated skylights may be present in the marketplace until March 31, 2008. NFRC labels for products using this procedure state: "RES97 rated at 90 degrees."
- p) ENERGY STAR Climate Zone: See ENERGY STAR Climate Zone Map on page 6. A complete list of ENERGY STAR Climate Zones by state, county, city, and zip code is available from the Partner Resources section of ENERGY STAR for Windows, Doors, and Skylights web pages accessible via www.energystar.gov/windows_partners or from DOE or its contractor.

- 2) Eligible Products: Windows, doors (including entry and patio), skylights (including tubular daylighting devices), and dynamic glazing products (while in the minimum tinted state for switch-able glazing products or the full "OPEN" position for internal shading systems) that meet the definitions specified above and testing, certification, and ENERGY STAR qualification criteria specified below.
- 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).
- 4) Effective Date: The date that a manufacturer may begin to qualify products as ENERGY STAR will be defined as the *effective date* of the Partnership Agreement, unless a later date has been specified (i.e., Equivalent Energy Performance Amendment). This most recent version of the Program Requirements, Version 4.0, 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 in each ENERGY STAR Climate Zone 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 Table 1 and the ENERGY STAR Climate Zone Map on the following page. Window and door products must be rated under either the NFRC 2001 or NFRC 2004 procedures.

Equivalent Energy Performance Amendment (effective September 19, 2005): Allows windows and doors with energy performance equivalent to the prescriptive criteria to qualify in the Southern and South/Central climate zones, excluding California. Equivalent performance criteria are not applicable to the Northern and North/Central climate zones or to skylights.

Skylights: Skylights rated using NFRC 2001 or NFRC 2004 procedures must meet the "NFRC rated at 20 degrees" skylight U-Factor qualification criteria. Skylights rated using NFRC 1997 procedures must have ratings for the residential test and simulation size (RES97) that meet the "RES97 rated at 90 degrees" skylight U-Factor qualification criteria.

ENERGY STAR® Qualified Windows, Doors and Skylights Eligibility

Windows & Doors

| Climate Zone | U-Factor ¹ | SHGC ² | | |
|---------------|-----------------------|------------------------|--|--------|
| Northern | ≤ 0.35 | Any | | |
| North/Central | ≤ 0.40 | ≤ 0.55 | | |
| South/Central | ≤ 0.40 | ≤ 0.40 | Prescriptive | |
| | ≤ 0.41 | ≤ 0.36 | Equivalent Performance (Excluding CA) | |
| | ≤ 0.42 | ≤ 0.31 | | |
| | ≤ 0.43 | ≤ 0.24 | | |
| | ≤ 0.43 | ≤ 0.24 | | |
| Southern | ≤ 0.65 | ≤ 0.40 | Prescriptive | |
| | ≤ 0.66 | Equivalent Performance | | |
| | ≤ 0.67 | | | ≤ 0.39 |
| | ≤ 0.68 | | | ≤ 0.38 |
| | ≤ 0.69 | | | ≤ 0.37 |
| | ≤ 0.70 | | | |
| | ≤ 0.71 | | | ≤ 0.36 |
| | ≤ 0.72 | | | ≤ 0.35 |
| | ≤ 0.73 | | | |
| | ≤ 0.74 | | | |
| ≤ 0.75 | ≤ 0.33 | | | |

Skylights

| Climate Zone | U-Factor ¹ | | SHGC ² |
|---------------|--|---------------------------------|-------------------|
| | 2001 and 2004 NFRC rated at 20° ³ | RES97 rated at 90° ⁴ | |
| Northern | ≤ 0.60 | ≤ 0.45 | Any |
| North/Central | ≤ 0.60 | ≤ 0.45 | ≤ 0.40 |
| South/Central | ≤ 0.60 | ≤ 0.45 | ≤ 0.40 |
| Southern | ≤ 0.75 | ≤ 0.75 | ≤ 0.40 |

¹ Btu/h.ft².°F

² Fraction of incident solar radiation.

³ U-Factor qualification criteria based on 2001 or 2004 NFRC simulation and certification procedures that rate skylights at a 20-degree angle. Although reported U-Factor is higher than RES97 rated products, energy performance at the ENERGY STAR minimum qualifying level is equivalent.

⁴ NFRC certification using the 1997 NFRC procedures for residential windows (RES 97) that rated skylights at a 90-degree angle. Skylights rated under this procedure may be present in the marketplace until March 31, 2008. NFRC labels for products using this procedure state: "RES97 rated at 90 degrees."

