

IECC Compliance Guide to Windows Used for Replacement and Remodeling in Hawaii

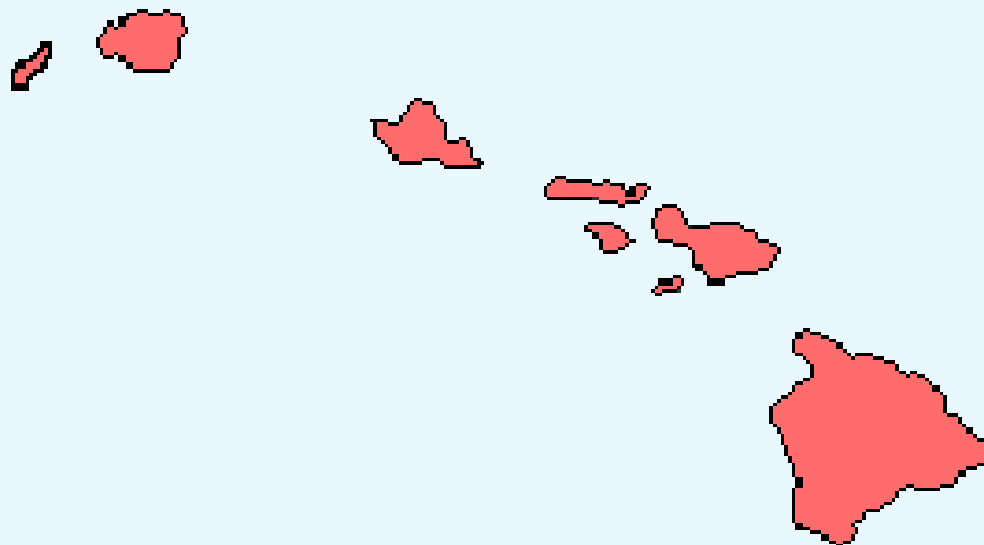
Designed to Comply with the IECC Requirements for Existing Single-Family Residential Buildings in Hawaii

Code: 2000 International Energy Conservation Code (IECC)

First Edition

How to Use This Guide

This guide is designed to meet the requirements of the IECC as it relates to Hawaii with respect to replacement windows and remodeling. This pamphlet contains a prescriptive path designed to simplify compliance with the IECC as it relates to Hawaii. The path incorporates the requirements for the climate zone in which Hawaii is located, i.e., 0 - 1,999 heating degree days.



Step-by-Step Instructions

1. Refer to the "IECC Requirements for Windows Used for Replacement or Remodeling in Hawaii" listed below to choose proper windows based upon the climate zone associated with Hawaii. Additional details and explanations related to the requirements may be found on the back of this sheet.
2. Replace the old windows or complete remodeling with windows that have U-factors and SHGCs less than or equal to the values in the prescriptive path and meet the code's maximum air leakage requirements.

Obtaining the IECC

The IECC is published by the International Code Council (ICC). For additional details on the IECC or to purchase a copy, contact the ICC or visit its website at www.iccsafe.org.

Limitations

This guide is an energy code (IECC based) replacement window and remodeling compliance aid for Hawaii and does not provide a guarantee for meeting the state energy code. The guide has not been customized to reflect any state-specific amendments to the IECC that Hawaii may adopt or has adopted. The window requirements in this guide, when used for remodeling, also depend upon the energy performance values of other envelope components in the home, i.e., insulation R-values in ceilings, walls, etc., not identified in this guide. For those values, refer to Tables in Chapter 5 of the IECC. For additional details on Hawaii's energy code, contact your local building code official.

Example: If you are replacing windows in a home in Hawaii, you will comply with the IECC as it relates to Hawaii if your replacement windows have a maximum U-factor of 0.75 and an SHGC of 0.40. The windows must also meet the code's maximum air leakage requirement of less than 0.3 cfm per square foot of window area.

IECC Requirements for Windows Used for Replacement or Remodeling in Hawaii

Maximum Window U-factor	Maximum Window SHGC
0.75	0.40

IECC Requirements for Windows Used for Replacement or Remodeling in Hawaii

Requirements for Compliance with the IECC for Window Replacement and Remodeling in Hawaii

 National Fenestration Rating Council CERTIFIED	World's Best Window Co. Millennium 2000+ Vinyl-Clad Wood Frame Double Glazing • Argon Fill • Low E Product Type: Vertical Slider
ENERGY PERFORMANCE RATINGS	
U-Factor (U.S./I-P) 0.35	Solar Heat Gain Coefficient 0.32
ADDITIONAL PERFORMANCE RATINGS	
Visible Transmittance 0.51	Air Leakage (U.S./I-P) 0.2
<small>Manufacturer stipulates that these ratings conform to applicable NFRC procedures for determining whole product performance. NFRC ratings are determined for a fixed set of environmental conditions and a specific product size. Consult manufacturer's literature for other product performance information. www.nfrc.org</small>	

Look for the NFRC Label!

The 2 most important values to look for are: **U-factor and Solar Heat Gain Coefficient (SHGC).**

For more information on energy efficient windows, go to the *Efficient Windows Collaborative* website at:



www.efficientwindows.org

NOTES:

1. The requirements listed on the front of this pamphlet are based upon the International Energy Conservation Code (IECC) and do not reflect any state-specific amendments to the IECC. The IECC has requirements, in addition to those shown, for additions to existing homes.
2. Source of Requirements: 2000 IECC, Ch. 5, Section 502.1.5, 502.2.5, and Table 502.2.5.
3. The requirements apply to single-family, residential construction.
4. Remodeling projects permitted to use this guide are additions, other than sunroom additions, less than 500 square feet of conditioned floor area. The total area of fenestration products shall not exceed 40% of the gross wall and roof area of the addition.
5. Alternate compliance approaches must be used for additions greater than 500 square feet and/or 40% fenestration area.
6. This guide may also be used for conditioned sunroom additions that maintain thermal isolation; are not used as kitchens or sleeping rooms; and are served by a separate heating or cooling system or are thermostatically controlled as a separate zone of the existing system.
7. The maximum U-factor for a replacement skylight shall be 0.75.
8. "Window" refers to any translucent or transparent material (i.e., glazing) in exterior openings of buildings, including skylights, glass doors, the glass areas of opaque doors, and glass block, along with the accompanying sashes, frames, etc.
9. Replacement refers to instances in which an entire new window unit is installed, including insert or pocket-type window replacements, which are commonly installed over an existing window frame.
10. U-factor is a number, generally between 0.2 and 1.20, that indicates the rate of heat loss (or gain) through a window. A lower U-factor demonstrates a greater resistance to heat loss or gain, i.e., better insulating value, of the window. This number is important for winter comfort.
11. SHGC, or Solar Heat Gain Coefficient, is a number between 0 and 1 that indicates the fraction of radiation (heat) from the sun that is transmitted through the window: the lower the SHGC, the less the amount of solar radiation that is allowed to pass through the window and become unwanted heat in the summer. This number is critical for summer comfort.
12. Window U-factor and SHGC must be determined from a National Fenestration Rating Council (NFRC) label on the product (see sample label), or from a limited table of product "default" values in the IECC.
13. The code requires that windows be labeled in a manner to determine that they meet the IECC's air infiltration requirements; specifically, equal to or better than 0.30 cfm per square foot of window area (swinging doors below 0.50 cfm) as determined in accordance with AAMA/WDMA 101/I.S.2 (ASTM E 283).
14. The labeled product U-factor and SHGC values should also be used in calculation procedures to properly size the home's HVAC equipment. The IECC requires the use of a computational procedure like ACCA Manual J to size equipment. Properly sized equipment operates more efficiently and effectively and will save money up front because consumers can avoid paying extra for oversized equipment.