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Florida Building Code, 5th Edition (2014) Update

June 30th, 2015

FBC Update, 5th Edition (2014)

Uses 2012 ICC as its Base Code as required by Florida Legislature ...

- Causing sections to be changed
- Books are even larger due to sections referring to things like *seismic* and *snow loads* are no longer eliminated

FBC Update, 5th Edition (2014)

* Permit, Plan Review and Inspection is required for ***ALL*** installation of Impact Resistant coverings

[A] 105.1 Required. Any owner or authorized agent who intends to construct, enlarge, alter, repair, move, demolish, or change the occupancy of a building or structure, or to erect, install, enlarge, alter, repair, remove, convert or replace any impact resistant coverings, electrical, gas, mechanical or plumbing system, the installation of which is regulated by this code, or to cause any such work to be done, shall first make application to the *building official* and obtain the required *permit*.

Structural Requirements

- Adds *Impact Resistant Coverings* for protection of louvers
- Approved as modified to address *life safety*
- *Labeling* provisions retained

Opening Protection

- ❑ R301.2.1.2 Protection of openings. ~~Exterior glazing~~ Glazed openings in buildings located in windborne debris regions shall be protected from windborne debris. Glazed opening protection for windborne debris shall meet the requirements of the Large Missile Test of ASTM E 1996 and ASTM E 1886 referenced therein, SSTD 12, TAS 201, 202 and 203, or AAMA 506, as applicable.

Opening Protection

- ❑ 1609.1.2 Protection of openings. In *wind-borne debris regions*, ~~glazing~~ glazed openings in buildings shall be impact resistant or protected with an impact-resistant covering meeting the requirements of, SSTD 12, ANSI/DASMA 115 (for garage doors and rolling doors) or TAS 201, 202 and 203, AAMA 506. ASTM E 1996 and ASTM E 1886 referenced herein, or an *approved* impact-resistant standard

Egress

1008.1.4.6

- The temporary installation or closure of storm shutters, panels and other approved hurricane protection devices shall be permitted on emergency escape and rescue openings in Group R occupancies during the threat of a storm. Such devices shall not be required to comply with the operational constraints of Section 1029.4. While such protection is provided, at least one means of escape from the dwelling or dwelling unit shall be provided. The means of escape shall be within the first floor of the dwelling or dwelling unit and shall not be located within a garage without a side hinged door leading directly to the exterior. Occupants in any part of the dwelling or dwelling unit shall be able to access the means of escape without passing through a lockable door not under their control.

Wind Zones

1609.1.2.2. Application of ASTM E 1996. The text of Section 6.2.2 of ASTM E 1996 shall be substituted as follows:

- 6.2.2 Unless otherwise specified, select the wind zone based on the strength design wind speed, *Vult*, as follows:
 - 6.2.2.1 *Wind Zone 1*—130 mph < ultimate design wind speed, *Vult* < 140 mph.
 - 6.2.2.2 *Wind Zone 2*—140 mph < ultimate design wind speed, *Vult* < 150 mph at greater than one mile (1.6 km) from the coastline. The coastline shall be measured from the mean high water mark

Wind Zones

- 6.2.2.3 *Wind Zone 3*—150 mph (58 m/s) < ultimate design wind speed, $V_{ult} < \del{160} \underline{170}$ mph (63 m/s), or 140 mph (54 m/s) < ultimate design wind speed, $V_{ult} < \del{160} \underline{170} \text{ mph}$ (63 m/s) and within one mile (1.6 km) of the coastline. The coastline shall be measured from the mean high water mark.
- 6.2.2.4 *Wind Zone 4*— ultimate design wind speed, $V_{ult} > \del{160} \underline{170}$ mph (63 m/s)

Swing Door

- Mod 5415 allows for ***outward*** swing door over step for residential use
- Supported by the Florida Home Builders Association

The 2010 Confusing Issues!

Table 101.4.1 NONEXEMPT EXISTING BUILDINGS

Exception “d” reads ...

“Buildings undergoing alteration that vary or change insulation, HVAC systems, water heating systems, or exterior envelope provided that the estimated cost exceeds 30 percent of the assessed value of the structure”

402.3.6 Replacement fenestration. Where some or all of an existing fenestration unit is replaced with a new fenestration product, including sash and glazing, the replacement fenestration unit shall meet the applicable requirements for *U*-factor and SHGC in Table 402.1.1.

Replacement Fenestration

- After an extensive debate lasting the better part of a year resulting in the adoption of modification EN 5031 to the 5th Edition (2014) Florida Building Code, the result is that ALL replacement fenestration will have to meet the 2014 Florida Energy Code on the current effective date of June 30th, 2015.
- This change, as adopted in the 2014 Florida Energy Code, added “Replacement fenestration” to the definition of “components”. This sealed the fate of continuing to use less energy efficient replacement windows in existing buildings.

Replacement Fenestration-Residential

R101.4.7 Building Systems and Components.

Thermal efficiency standards are set for the following building systems and **components** where new products are installed or replaced in existing buildings, and for which a permit must be obtained. New products shall meet the minimum efficiencies allowed by this code for the following systems and **components**:

Heating, ventilating or air conditioning systems;

Service water or pool heating systems;

Lighting systems;

Replacement Fenestration

Energy

The main change as it affects the window industry will be the enforcement of a new Energy Code for Florida.

- The 30% rule has been clarified and will now be null and void.
- All replacement products will now have to meet the energy code. No exceptions.
- New construction will have a choice for following the performance path for compliance or the prescriptive path.

Energy

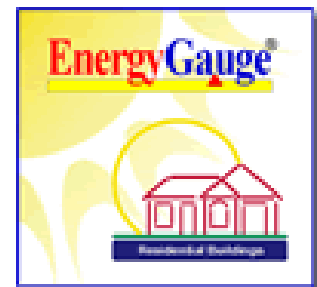
Prescriptive Path for compliance...

- With the prescriptive or pre-determined path, designers must ensure that the proposed windows and doors have a U-value and SHGC that meet or exceed the required ratings for their area.
- Windows and doors must bear the label with the energy ratings independently confirmed by National Fenestration Rating Council (NFRC).
- Section 402.3.2 of the code specifies that when the U-factor varies between the fenestration products, the use of area-weighted averaging is allowed to satisfy the U-factor requirements.

Energy

Performance Path for compliance

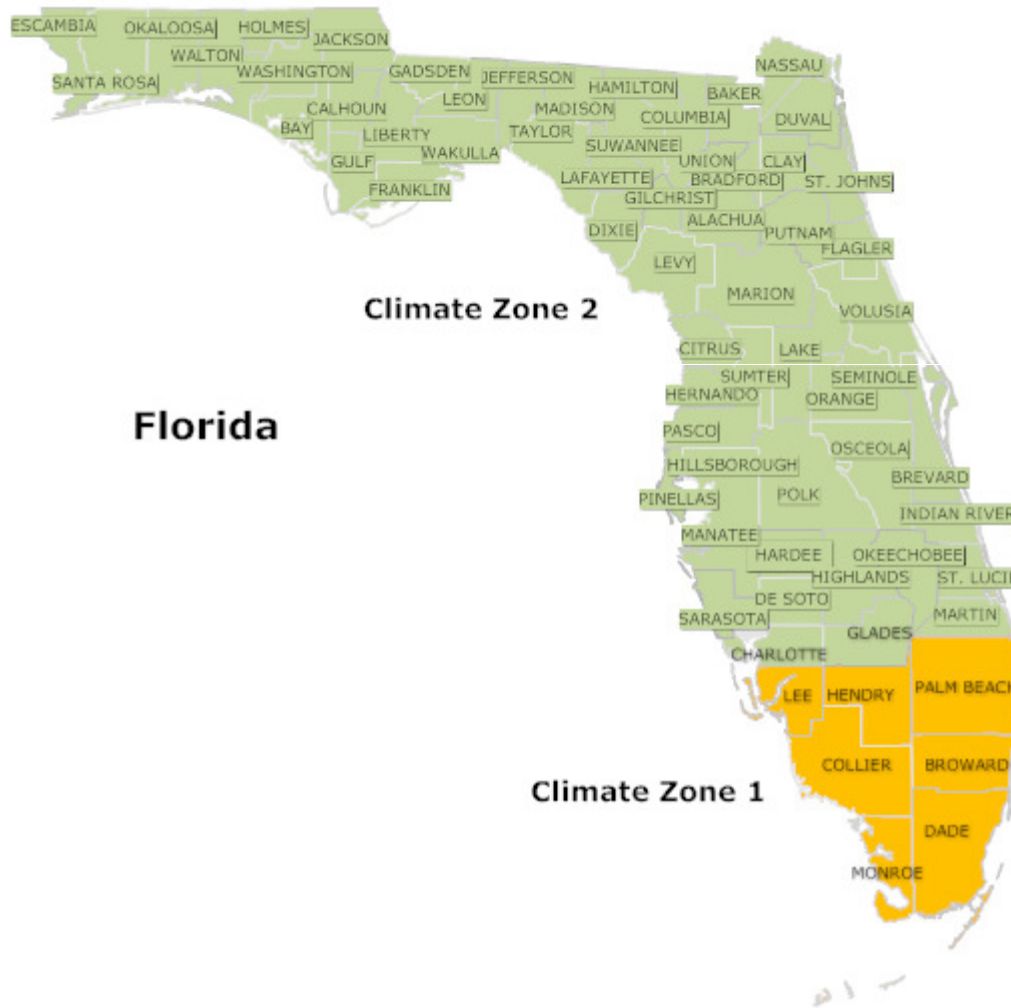
- Designers need to use an energy compliance software tool approved by the Florida Building Commission. This analysis only includes heating, cooling and service water heating.
- Use of this software allows design professionals to perform a **trade-off** between U-values and SHGC ratings. When using trade-offs from Section 405, the area weighted average maximum allowed for fenestration SHGC is 0.50.



Florida Energy Climate Zones

Florida will be broken into two specific Climate Zones.

Both with different code requirements and product needs.



Florida Energy Climate Zones

Prescriptive Path

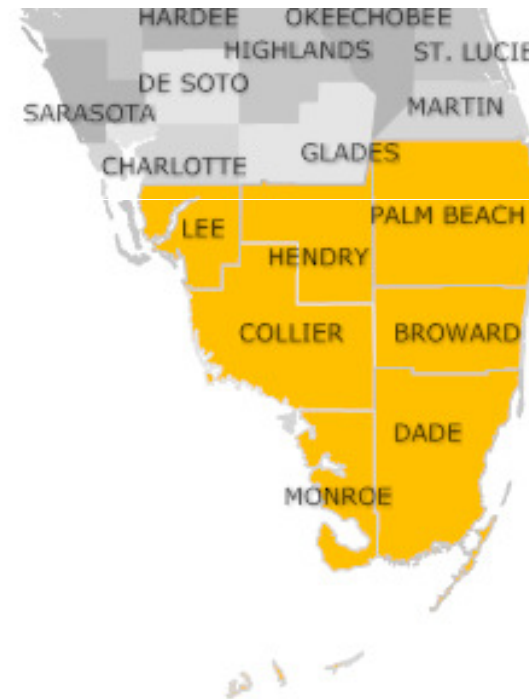
Zone 1 (Dade, Broward, Monroe, Palm Beach, Collier, Lee, Hendry Counties)

Non-Impact windows

U .65 SHGC .25

Impact windows

U .75 SHGC .25



Florida Energy Climate Zones

What does this mean? ...

Zone 1 (Dade, Broward, Monroe, Palm Beach, Collier, Lee, Hendry Counties)

Non-Impact windows U .65 SHGC .25

- Aluminum will still be available but will be Insulated High Performance LowE. No option for Monolithic glass in non-impact windows,
- Vinyl will be more widely introduced into the market to meet codes.

Impact windows U .75 SHGC .25

- Aluminum will still be available but most manufacturers will have to use Insulated Impact – High Performance LowE.
- Vinyl will be more widely introduced into the market. Limitation will be structural DP Ratings.

Florida Energy Climate Zones

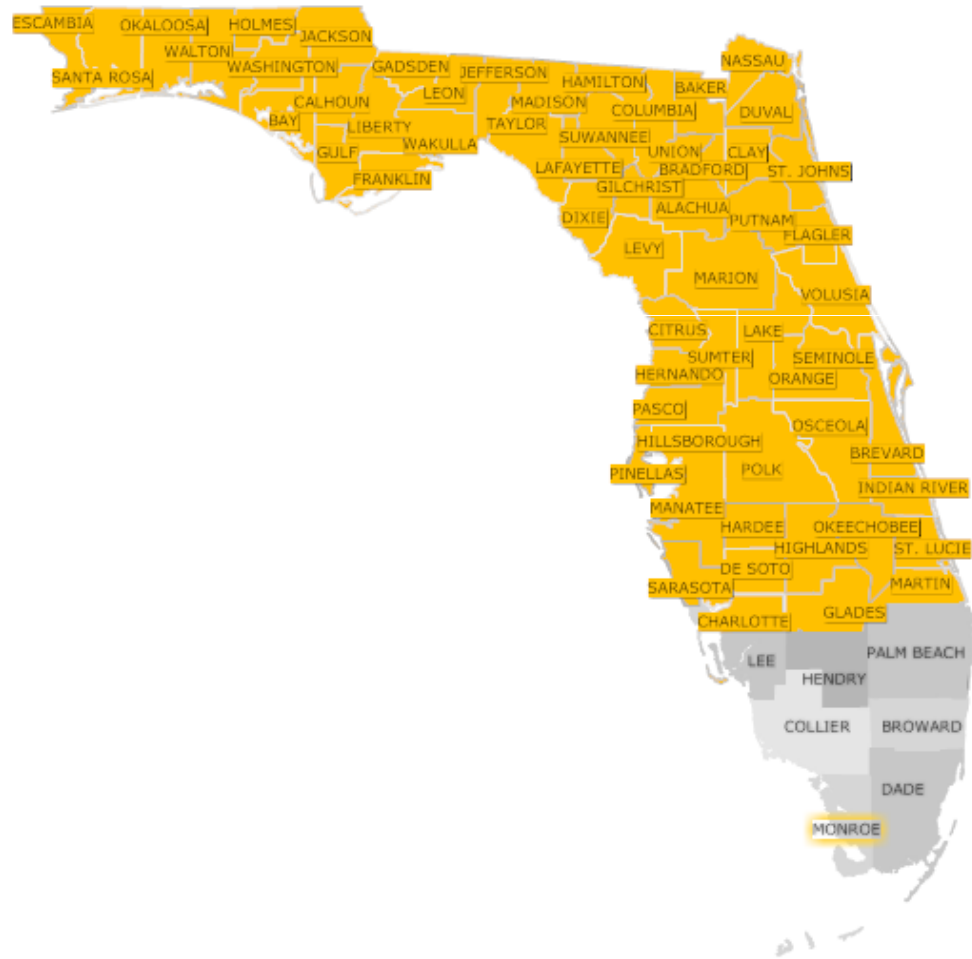
Climate Zone 2 – All Florida except Climate Zone 1.

Non-Impact windows

U .40 SHGC .25

Impact windows

U .65 SHGC .25



Florida Energy Climate Zones

What does this mean? ...

Zone 2 (All of Florida outside of Zone 1)

Non-Impact windows U .40 SHGC .25

- Aluminum will no longer be able to be used outside Zone 1 for replacement applications.
- Zone 2 will become a vinyl market.

Impact windows U .65 SHGC .25

- Aluminum may still be available, but some current products cannot meet the .65 U value. .25 SHGC can be achieved with High Performance IG Glass.
- Most jobs will require vinyl impact, which will have High Performance IG Glass.

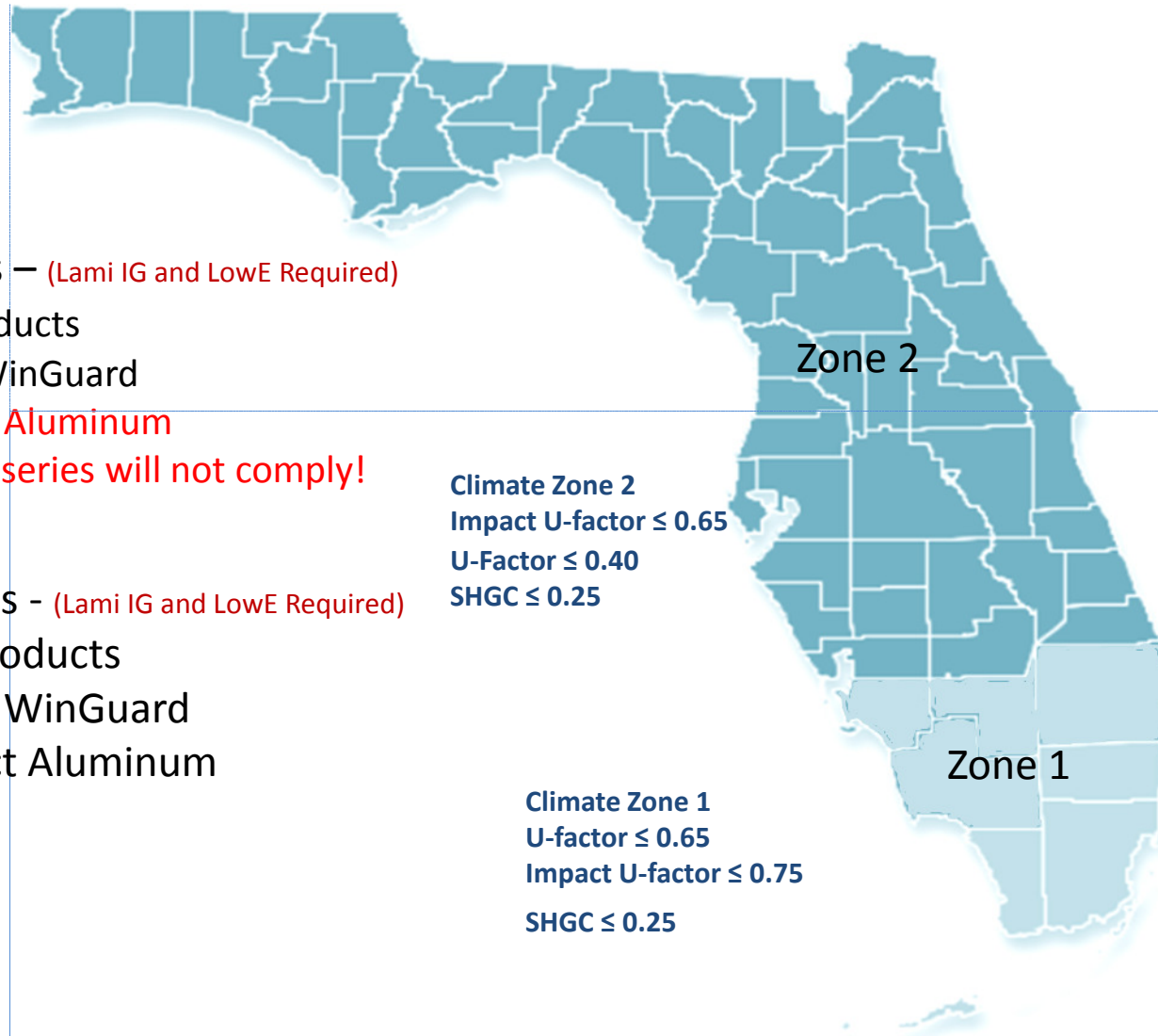
Florida Energy Climate Zones

- Zone 2 Products – (Lami IG and LowE Required)

- All Vinyl Products
- Aluminum WinGuard
- Non Impact Aluminum
200 and 600 series will not comply!

- Zone 1 Products - (Lami IG and LowE Required)

- All Vinyl Products
- Aluminum WinGuard
- Non Impact Aluminum



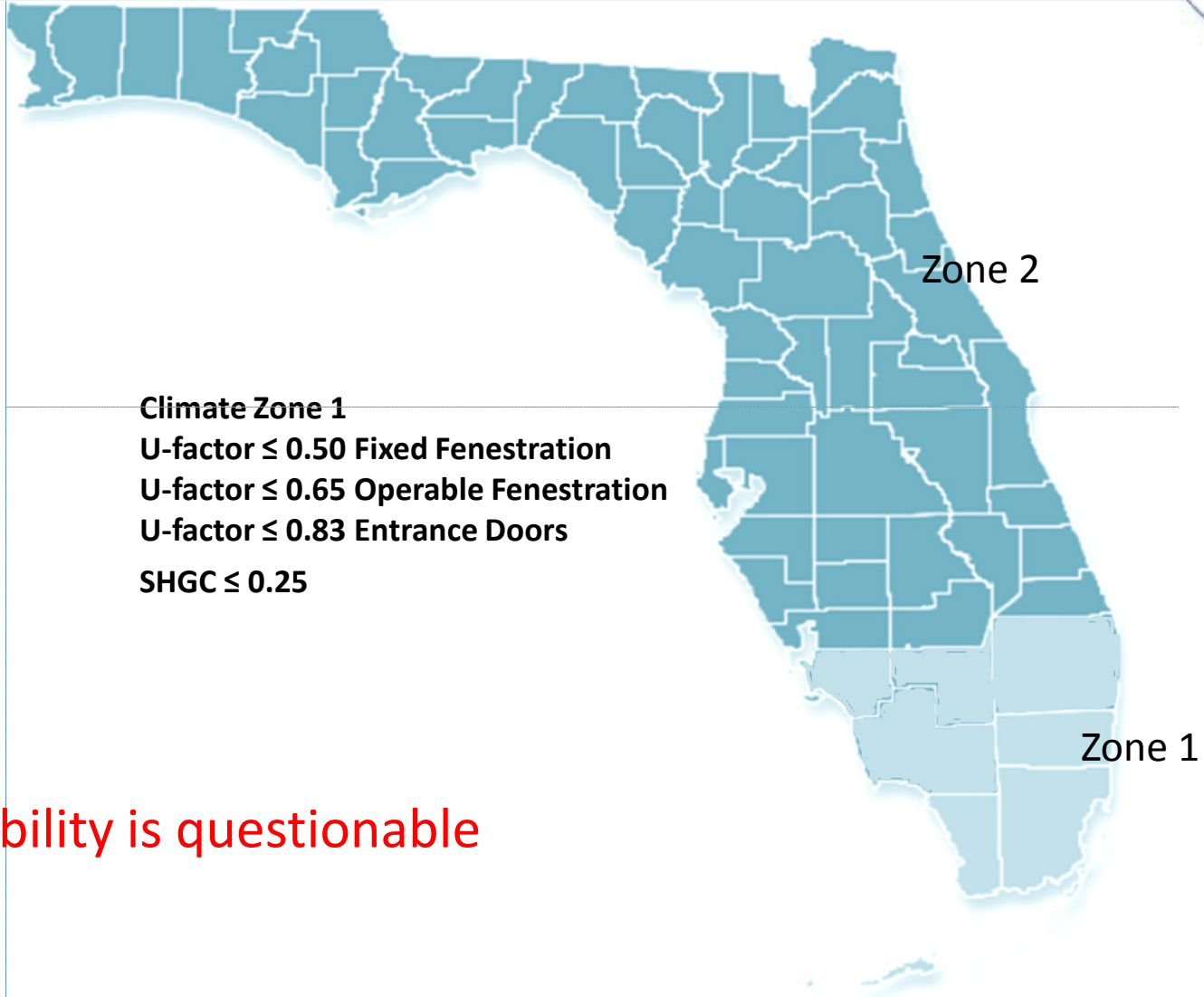
Climate Zone 2
Impact U-factor ≤ 0.65
U-Factor ≤ 0.40
SHGC ≤ 0.25

Climate Zone 1
U-factor ≤ 0.65
Impact U-factor ≤ 0.75
SHGC ≤ 0.25

Zone 1:
Dade
Broward
Monroe
Palm Beach
Hendry
Lee
Collier

Florida Energy Climate Zones

Zone 1:
Dade
Broward
Monroe
Palm Beach
Hendry
Lee
Collier



Enforceability is questionable

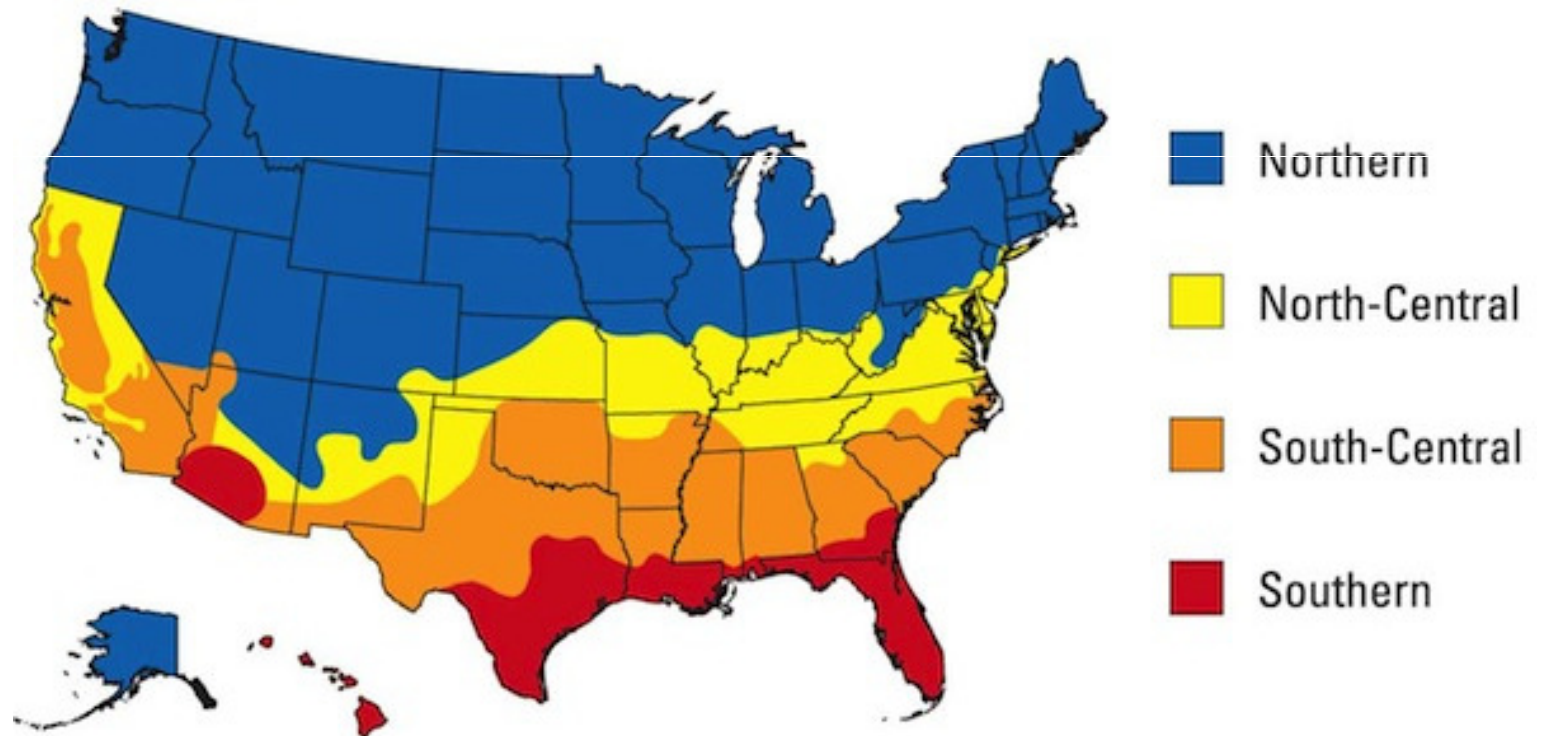
Energy Star 6.0

January 1, 2015



Energy Star 6.0

Was implemented January 1st, 2015 except for the Northern Zone which will be delayed for 1 year.



Energy Star 6.0

Energy Star will match the Florida Energy Code for Windows in Zone 2 in 2015

Previous Energy Star Criteria

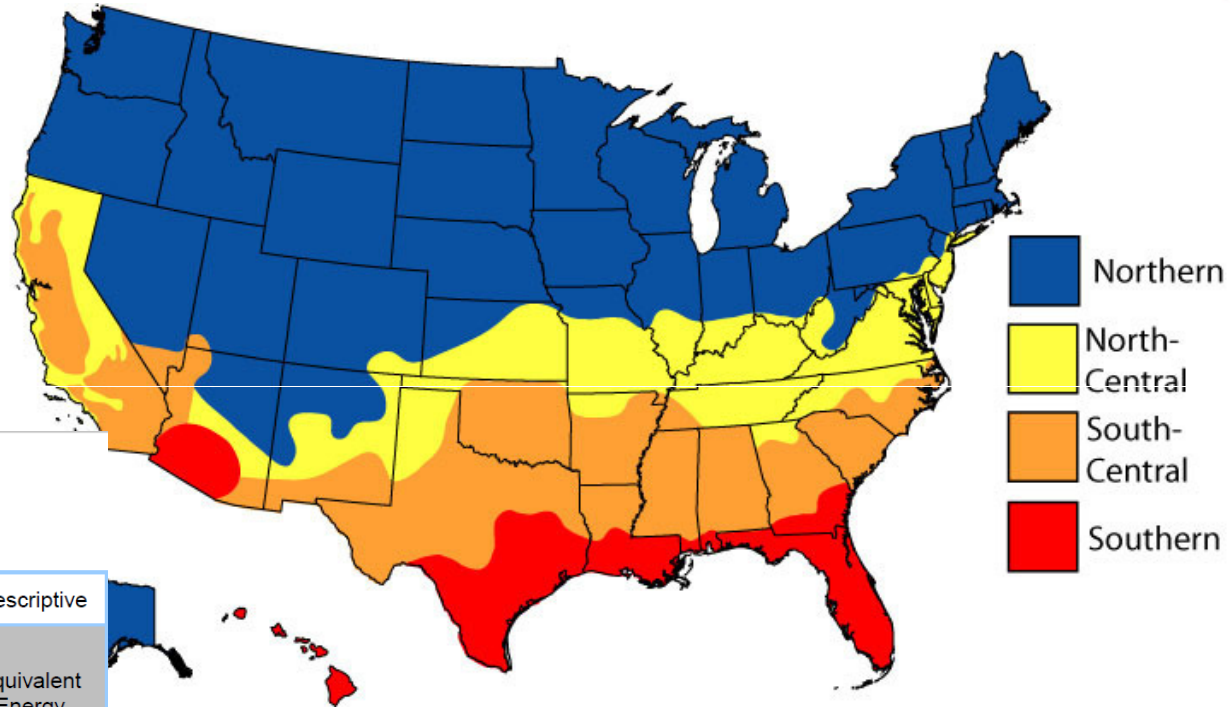
Zone	U-Factor	SHGC
Northern	≤ 0.30	Any
Tradeoffs	$= 0.31$	≥ 0.35
	$= 0.32$	≥ 0.40
North-Central	≤ 0.32	≤ 0.40
South-Central	≤ 0.35	≤ 0.30
Southern	≤ 0.60	≤ 0.27

6.0 Energy Star Criteria

Zone	U-Factor	SHGC
Northern	≤ 0.27	Any
Tradeoff	$= 0.28$	≥ 0.32
North-Central	≤ 0.29	≤ 0.40
South-Central	≤ 0.31	≤ 0.25
Southern	≤ 0.40	≤ 0.25



Energy Star Windows



270

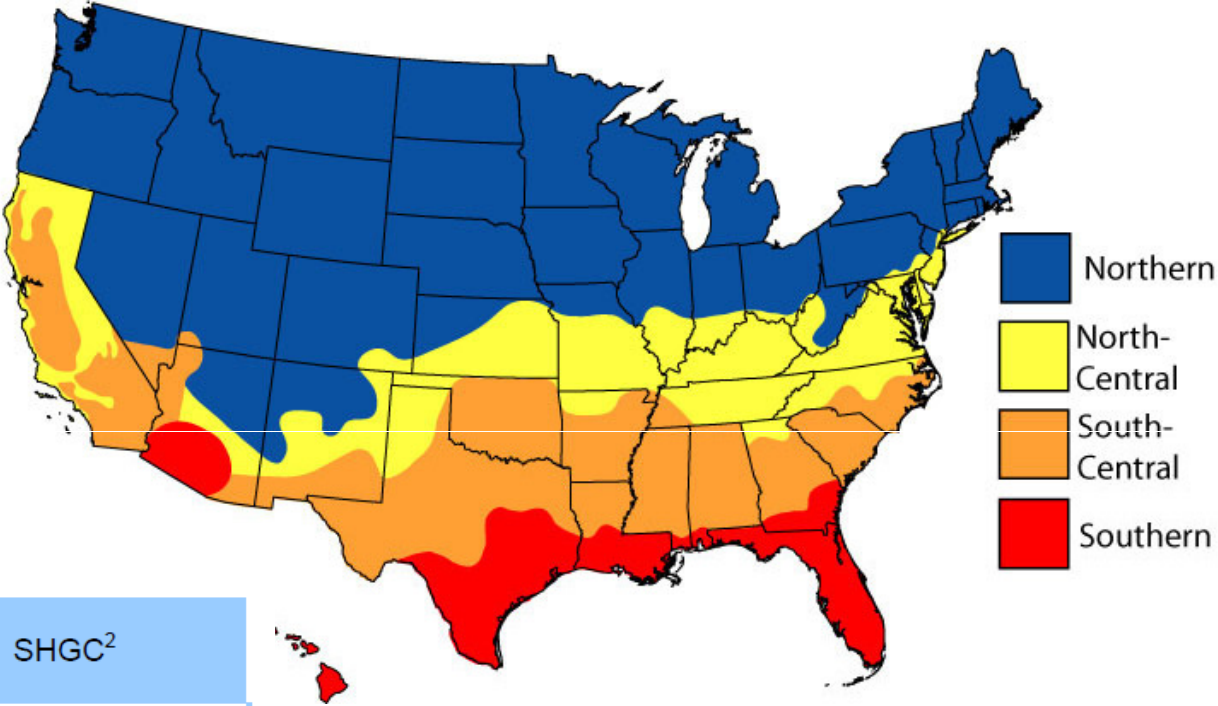
Windows

Climate Zone	U-Factor ¹	SHGC ²	
Northern	≤ 0.27	Any	Prescriptive
	$= 0.28$	≥ 0.32	Equivalent Energy Performance
	$= 0.29$	≥ 0.37	
	$= 0.30$	≥ 0.42	
North-Central	≤ 0.30	≤ 0.40	
South-Central	≤ 0.30	≤ 0.25	
Southern	≤ 0.40	≤ 0.25	

271 Air Leakage ≤ 0.3 cfm/ft²



Energy Star Doors



Doors

Glazing Level	U-Factor ¹	SHGC ²	
Opaque	≤ 0.17	No Rating	
≤ ½-Lite	≤ 0.25	≤ 0.25	
> ½-Lite	≤ 0.30	Northern North-Central	≤ 0.40
		Southern South-Central	≤ 0.25

← Sliding Glass Door requirements

Air Leakage for Sliding Doors ≤ 0.3 cfm/ft²
 Air Leakage for Swinging Doors ≤ 0.5 cfm/ft²



Energy Star Comparison

ENERGY STAR as of 2014				
	Windows		Doors	
	U	SHGC	U	SHGC
N	=<.30	Any	=<.32	=<.30
	.31	>=.35	=<.32	=<.30
	.32	>=.40	=<.32	=<.30
NC	=<.32	=<.40	=<.32	=<.30
SC	=<.35	=<.30	=<.32	=<.30
S	=<.60	=<.27	=<.32	=<.30

ENERGY STAR 2015/2016*				
	Windows		Doors	
	U	SHGC	U	SHGC
N*	=<.27	Any	=<.30	=<.40
	.28	>=.32		
	.29	>=.37		
	.30	=>.42		
NC	=<.30	=<.40	=<.30	=<.40
SC	=<.30	=<.25	=<.30	=<.25
S	=<.40	=<.25	=<.30	=<.25

Energy Star requirements for U-factor and Solar Heat Gain Coefficients are getting tighter across the country. *Northern requirements go into effect in January 2016, a year after the rest of the country's requirements roll out in January 2015.