



United States: ENERGY STAR Considerations

The ENERGY STAR Version 7.0 specification represents a significant update to energy performance requirements, which is effective 10/23/23. ENERGY STAR certified products will need to meet even more stringent U-factor and Solar Heat Gain Coefficient (SHGC) requirements than before. In addition to updated values, ENERGY STAR has updated the look of their map, which includes four Climate Zones - Northern, North-Central, South-Central and Southern.

This guide is a summary of how ENERGY STAR impacts Marvin window and door solutions and options to consider when selecting insulating glass based on ENERGY STAR Climate Zones and Marvin collection. For detailed information, refer to the [ENERGY STAR website](#).

What's the purpose of ENERGY STAR?

ENERGY STAR is a **voluntary program, which strives to establish criteria that is 'better than' Code**. It is run by the U.S. Environmental Protection Agency (EPA) and promotes energy efficiency. ENERGY STAR certified windows, doors, and skylights are manufactured by an ENERGY STAR partner like Marvin, are independently tested, labeled, and have National Fenestration Rating Council (NFRC) ratings that meet residential window, door, and skylight product performance criteria set by ENERGY STAR.

What are the values for Version 7?

The charts below provide summaries of the Version 7 ENERGY STAR performance values. These requirements must be met to earn ENERGY STAR certification and display the ENERGY STAR label for certified products.

Windows (residential building, includes transoms)		
Climate Zone	U-Factor	SHGC
Northern*	Less than or equal to 0.22	Greater than or equal to 0.17
North-Central	Less than or equal to 0.25	Less than or equal to 0.40
South-Central	Less than or equal to 0.28	Less than or equal to 0.23
Southern	Less than or equal to 0.32	Less than or equal to 0.23

*Shows prescriptive requirements only

Doors (sliding, swinging in residential building)			
Glazing Level	U-Factor	SHGC	
Greater than ½-Lite (Greater than half the area of the door is glass.) <i>Note:</i> A majority of Marvin door solutions fall into this category.	Less than or equal to 0.26	Northern + North-Central	Less than or equal to 0.40
	Less than or equal to 0.28	Southern + South-Central	Less than or equal to 0.23

These charts have been adapted for Marvin window and door solutions. Refer to the [ENERGY STAR website](#) for more detailed information.

What are the requirements to meet federal tax credits for windows?

In order to qualify for federal tax credits for windows, the ENERGY STAR U-Factor and SHGC values associated with **“Most Efficient”** must be met. The Most Efficient values are listed below. Keep in mind that these values do change over time and will be updated on January 1, 2024.

Windows		
Climate Zone	U-Factor	SHGC
Northern	Less than or equal to 0.20	Greater than or equal to 0.20
North-Central		Less than or equal to 0.40
South-Central		Less than or equal to 0.25
Southern		

Note: Federal tax incentives are available through 2032 and renewable on an annual basis.

What are the requirements to meeting federal tax credits for doors?

In order to qualify for federal tax credits for doors, the ENERGY STAR U-Factor and SHGC values associated with **Version 7** must be met, which is effective October 23, 2023. Prior to this date, Version 6 values must be met to qualify for federal tax credits for doors.

Doors (sliding, swinging in residential building)			
Glazing Level	U-Factor	SHGC	
Greater than ½-Lite (Greater than half the area of the door is glass.) Note: A majority of Marvin door solutions fall into this category.	Less than or equal to 0.26	Northern + North-Central	Less than or equal to 0.40
	Less than or equal to 0.28	Southern + South-Central	Less than or equal to 0.23

These charts have been adapted for Marvin window and door solutions. Refer to the [ENERGY STAR website](#) for more detailed information.

Note: Federal tax incentives are available through 2032 and renewable on an annual basis.

What about local codes and requirements?

In the U.S. every three years, ICC updates Codes such as the International Residential Code (IRC) and International Energy Conservation Code (IECC). The Codes establish minimum requirements for energy efficient buildings using prescriptive or performance-related provisions. Every state and local jurisdiction can adopt and/or amend the Codes. **It’s important to refer to state and/or local Codes for requirements.**

What are glass options to consider at Marvin?

There are many factors that affect the energy performance of windows and doors. The choices that are made around ‘building’ a window culminate in its total energy performance, including window type, window size, glass type and coatings, glass configuration, and many other attributes. There are many insulating glass options to consider when seeking to meet the ENERGY STAR U-Factor and SHGC values. Review the considerations below and on the next page when looking to meet certain values for a project.



Dual Pane or Triple Pane?

Our standard insulating glass is **Dual Pane**: two panes of glass with a single Low E coating and insulated with argon gas.* Compared to a single glass pane, Dual Pane insulating glass cuts energy costs significantly because of the low emissivity coating and the gas filled insulating space between the glass layers.

Triple Pane insulating glass consists of three panes of glass with Low E coatings applied to the surface. Two glass spaces are insulated with argon gas* between the panes. In general, Triple Pane insulating glass offers improved energy efficiency (lower U-Factor) over Dual Pane.

**Argon gas is not available for all elevations*

Low E1, Low E2, or Low E3?

Type	Description	Visible Transmittance	Thermal insulating performance	Solar heat gain	General climate usage
Low E1	Single layer of silver coating	Higher	Slightly reduced	Higher	Northern
Low E2	Double layer of silver coating	Balanced	Balanced	Balanced	Northern North-Central South-Central
Low E3	Triple layer of silver coating	Slightly reduced	Higher	Lower	All Climate Zones

Visible transmittance is the amount of visible light transferred through a window. Low E coatings can reject solar heat gain without significant reduction to visible light passing through the glass.

Thermal insulating performance is represented by the U-Factor, which measures how well a window keeps heat inside of your home. Lower numbers indicate greater insulating capabilities. It’s a particularly important measure for climates with colder winters. The lower the number, the higher thermal insulating performance.

Solar heat gain is represented by the SHGC value, which measures how much radiant heat enters your home. The lower the number, the less heat is let in.



Add ERS to Low E1, Low E2, or Low E3?

ERS is an **optional coating placed on the interior surface** (room side) of the insulating glass that results in **reduced U-Factors** (ability to keep heat inside of your home).

This coating **can be used in conjunction with Low E2 or Low E3** insulating glass. It maintains a similar solar heat gain, is neutral in color, and can be used in all Climate Zones. It can be touched; however, abrasive products should be avoided when cleaning the glass.

Keep in mind that its ability to reflect escaping heat back into the room means a slightly cooler interior glass surface, since the heat is not absorbed by the glass. The cooler surface may see a bit more condensation in cold climates versus traditional Low E glass make-ups. **This condensation is expected and not a defect.**

What insulating glass option(s) should you start with?

When seeking to meet specific values for your window or door solutions, use the grids below as a starting point based on region and Marvin collection.

Essential Collection		
Climate Zone	Windows	Doors
Northern	Dual Pane Low E3 + ERS*	Dual Pane Low E3 + ERS
North-Central	Dual Pane Low E3 + ERS	Dual Pane Low E3 + ERS
South-Central	Dual Pane Low E3	Dual Pane Low E3
Southern	Dual Pane Low E3	Dual Pane Low E3
*Direct glaze only		

Elevate Collection		
Climate Zone	Windows	Doors
Northern	Triple Pane Low E2 or Low E3*	Dual Pane Low E3 + ERS
North-Central	Dual Pane Low E3 + ERS	Dual Pane Low E3 + ERS
South-Central	Dual Pane Low E3	Dual Pane Low E3
Southern	Dual Pane Low E3	Dual Pane Low E3
*Triple Pane only available on CA, AWN, and DG		

What glass option(s) should you start with? (continued)

When seeking to meet specific values for your window or door solutions, use the grids below as a starting point based on region and Marvin collection.

Ultimate Collection		
Climate Zone	Windows	Doors
Northern	Triple Pane Low E2 or Low E3	Dual Pane Low E2 + ERS or Low E3 + ERS
North-Central	Dual Pane Low E3 + ERS*	Dual Pane Low E2 + ERS or Low E3 + ERS
South-Central	Dual Pane Low E3 + ERS or E3**	Dual Pane Low E3 + ERS
Southern	Dual Pane Low E3	Dual Pane Low E3 + ERS
*UCA and UDH only; for all other operating windows start with Triple Pane Low E2		
**UCA only		

Modern Collection		
Climate Zone	Windows	Doors
Northern	Triple Pane Low E2 or Low E3	Dual Pane Low E2 + ERS or Low E3 + ERS
North-Central	Triple Pane Low E2 or Low E3	Dual Pane Low E2 + ERS or Low E3 + ERS
South-Central	Dual Pane Low E3 + ERS	Dual Pane Low E3 + ERS
Southern	Dual Pane Low E3	Dual Pane Low E3 + ERS