2024 ENERGY EFFICIENCY OVERVIEW

Many factors affect window and door energy performance. The choices 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 necessary 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. One low E coating is selectable, while a second low E1 coating is added.

LOW E1, LOW E2, OR LOW E3?

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 windows. The lower the number, the higher thermal insulating performance.

Solar heat gain coefficient 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.

TYPE	DESCRIPTION	VISIBLE TRANSMITTANCE	THERMAL INSULATING PERFORMANCE	SHGC	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

*Argon gas is not available for all elevations.

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ADD ERS TO LOW E1, LOW E2, OR LOW E3?

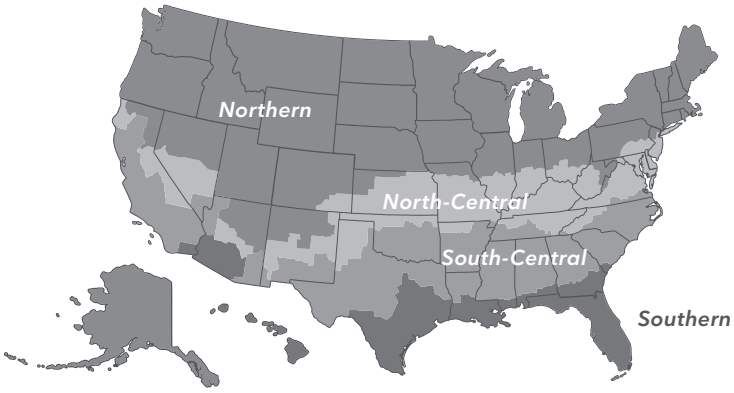
ERS is an **optional coating placed on the interior surface** (room side) of the insulating glass that results in reduced U-Factors (ability to keep heat inside of your home).

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.

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.

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.**



MARVIN ENERGY EFFICIENCY CHARTS

DUAL PANE

ESSENTIAL DUAL-PANE	MAX SIZE (INCH)		BEST PERFORMANCE VALUES			
PRODUCT	WIDTH	HEIGHT	E3/ERS AR		E2 AR	
			U-value	SHGC	U-value	SHGC
ESCA	35 ½	83 ½	0.26	0.19	0.30	0.29
ESCAP	71 ½	71 ½	0.23	0.22	0.28	0.33
ESCAP	47 ½	83 ½	0.23	0.22	0.28	0.33
ESAWN	47 ½	35 ½	0.26	0.19	0.29	0.29
ESAWN	59 ½	47 ½	0.26	0.19	0.29	0.29
ESDH	47 ½	77 ½	0.25	0.22	0.30	0.33
ESDHP	59 ½	71 ½	0.23	0.22	0.28	0.34
ESGL	71 ½	59 ½	0.25	0.22	0.30	0.33
ESDG	83	83	0.22	0.24	0.27	0.35

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TRIPLE PANE

ELEVATE	MAX SIZE (INCH)		BEST PERFORMANCE VALUES			
PRODUCT	WIDTH	HEIGHT	E3/E1/ERS AR		E2/E1 AR	
			U-value	SHGC	U-value	SHGC
ELCA	36	71 1/8	0.18	0.17	0.20	0.27
ELCAP	56	71 1/8	0.16	0.20	0.18	0.31
ELCAP	72	59 1/8	0.16	0.20	0.18	0.31
ELAWN	48	39 1/8	0.18	0.17	0.20	0.27
ELAWN	40	47 1/8	0.18	0.17	0.20	0.27
ELDG	61 11/16	102 13/16	0.15	0.20	0.17	0.30

TRIPLE PANE

MODERN	MAX SIZE (INCH)		BEST PERFORMANCE VALUES			
PRODUCT	WIDTH	HEIGHT	E3/E1/ERS AR		E2/E1 AR	
			U-value	SHGC	U-value	SHGC
MCA	36 1/2	95 1/16	0.21	0.17	0.23	0.27
MCAP	61	95 1/16	0.18	0.19	0.20	0.30
MAWN	37 1/2	92 3/16	0.21	0.17	0.23	0.27
MAWN	44	78	0.21	0.17	0.22	0.27
MAWNP	53 1/8	95	0.18	0.19	0.20	0.30
MDG 1¼	50 3/8	92 3/8	0.16	0.22	0.18	0.34
MDG 1 9/16	64	141 3/8	0.15	0.21	0.17	0.32
MIFD/MOFD (X)	48 7/8	98 7/8	0.21	0.17	0.22	0.26
MIFD/MOFD (OX/XO)	96	98 7/8	0.21	0.17	0.22	0.29
MMSD (OX/XO)	106 1/4	97 7/8	0.19	0.19	0.21	0.29

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TRIPLE PANE

ULTIMATE CLAD	MAX SIZE (INCH)		BEST PERFORMANCE VALUES			
PRODUCT	WIDTH	HEIGHT	E3/E1 ERS AR		E2/E1 AR	
			U-value	SHGC	U-value	SHGC
UCA (1")	42	85 5/8	0.21	0.17	0.23	0.26
UCAP	54 1/2	85 5/8	0.19	0.19	0.21	0.30
UAWN (1")	42	85 5/8	0.22	0.17	0.23	0.26
UAWN (1")	85 5/8	42	0.22	0.17	0.23	0.26
UAWNP	42	85 5/8	0.19	0.19	0.21	0.30
UAWNP	85 5/8	42	0.19	0.19	0.21	0.30
UDH G2	34 3/4	127 1/2	0.23	0.18	0.25	0.27
UDH G2	65 1/4	66 1/2	0.23	0.18	0.25	0.27
UDHP G2	41 1/4	87 13/16	0.22	0.18	0.25	0.28
UDHP G2	86 1/4	42 3/4	0.22	0.18	0.25	0.28
UDG	62 9/16	145 9/16	0.17	0.21	0.20	0.32
UIFD/UOFD G2, 2 1/4" (X)	43 7/16	105 7/16	0.21	0.14	0.22	0.21
UIFD/UOFD G2, 2 1/4" (OX/XO)	84 5/8	105 7/16	0.21	0.14	0.22	0.21
UIFD/UOFD, 2 1/4", 3" Stiles (X)	43 7/16	98 1/2	0.19	0.17	0.20	0.26
UIFD/UOFD, 2 1/4", 3" Stiles (OX/XO)	84 5/8	98 1/2	0.19	0.17	0.20	0.26
UMSD (OX/XO)	111 9/16	101 3/8	0.19	0.17	0.21	0.25
UBFD (1R)	44 7/8	104 3/8	0.21	0.14	0.22	0.22
UBFD (2R)	86 3/16	104 3/8	0.21	0.14	0.22	0.22

All performance values are subject to variability based on size and features selected such as SDLs and GBGs.
Please refer to performance summaries before ordering to ensure desired values meet specification.

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