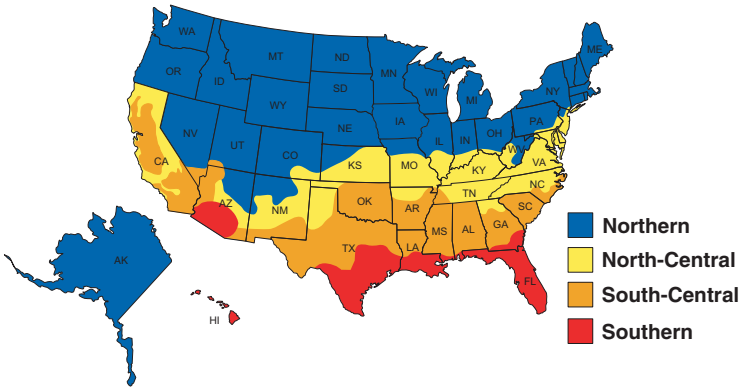
Weather Shield Thermal Performance Criteria

Weather Shield®
Premium Windows & Doors

As a proud ENERGY STAR® partner, we ensure our products are rated, certified and labeled for U-Value and Solar Heat Gain by the National Fenestration Rating Council (NFRC). The 2010 ENERGY STAR criteria for residential windows and doors are tailored to four Climate Zones. A product's energy efficiency for a given climate is based on its impact on heat gain and loss in cold weather and heat gain in warm weather.

United States ENERGY STAR Criteria



Windows

Climate Zone	U-Factor[1]	SHGC[2]	
Northern	≤0.30	Any	Prescriptive
	= 0.31	≥0.35	Equivalent Energy Performance
	= 0.32	≥0.40	
North-Central	≤0.32	≤0.40	
South-Central	≤0.35	≤0.30	
Southern	≤0.60	≤0.27	

Doors

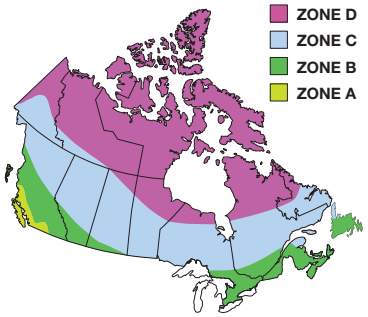
Glazing Level	U-Factor[1]	SHGC[2]
Opaque	≤0.21	No Rating
≤ 1/2-Lite	≤0.27	≤0.30
> 1/2-Lite	≤0.32	≤0.30

[1] Btu/h • ft^2 • °F
[2] Fraction of Incident solar radiation

Canadian ENERGY STAR Criteria

ENERGY STAR
HIGH EFFICIENCY
HAUTE EFFICACITÉ

1 800 387-2000
energystar.gc.ca



ENERGY STAR Requirements for Windows (Effective October 1, 2010)

Zone	Heating Degree-Day Range	Compliance Paths: Energy Rating (ER) — Minimum ER (unitless) Maximum U-Factor 2.00 W/m^2 • K (0.35 Btu/h • ft^2 • °F)	or	U-Factor — Maximum U-Factor W/m^2 • K (Btu/h • ft^2 • °F)	Minimum ER (unitless)
A	< = 3500	21	or	1.80 (0.32)	13
B	> 3500 to < = 5500	25	or	1.60 (0.28)	17
C	> 5500 to < = 8000	29	or	1.40 (0.25)	21
D	> 8000	34	or	1.20 (0.21)	25

ENERGY STAR Requirements for Doors (Effective October 1, 2010)

Zone	Heating Degree-Day Range	Compliance Paths: Energy Rating (ER) — Minimum ER (unitless) Maximum U-Factor 2.00 W/m^2 • K (0.35 Btu/h • ft^2 • °F)	or	U-Factor — Maximum U-Factor W/m^2 • K (Btu/h • ft^2 • °F)
A	< = 3500	21	or	1.80 (0.32)
B	> 3500 to < = 5500	25	or	1.60 (0.28)
C	> 5500 to < = 8000	29	or	1.40 (0.25)
D	> 8000	34	or	1.20 (0.21)

[1] The U-factor measures how well a window/door prevents hot or cold from transferring through the product. The lower the U-factor, the more energy efficient the material.

[2] The Solar Heat Gain Coefficient (SHGC) measures how well a window or door prevents heat from passing through it. The lower the window or door SHGC, the less heat it allows to pass through it.

Patio Doors are tested to the specification of > $^1/_2$ lite panel.

All units are tested in accordance to National Fenestration Rating Counsel (NFRC) procedures. U-Factors are derived from computer simulations using WINDOW 5.2 and THERM 5.2 programs. Simulations are then verified by testing in accordance with NFRC 100-04.

The performance of windows and doors may be affected by factors beyond Weather Shield's control, such as handling and installation, construction details of the building, exposure conditions, maintenance, normal wear and tear, migration of an inert gas from the insulated glass unit and the like. Ratings (for example, R or U-factors, infiltration tests, etc.) are for comparison purposes only. While Weather Shield products are manufactured to meet or exceed published ratings, it is not possible to guarantee that they will meet or exceed those ratings after they have been installed, and this is specifically excluded from any warranty.

Weather Shield reserves the right to change its products without prior notification. Please verify with labels on products to confirm ratings and test dates. Ratings vary based on glazing, grilles, etc. This information is accurate based on the date specified on the test date referred to in the document.

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EnduraShield Fiberglass Awning Windows - Fiberglass Interiors (Product ID 5202) Thermal Performance Data

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ENERGY PERFORMANCE DATA NFRC TOTAL UNIT CALCULATIONS [a]							U.S. Energy Star 2011				CANADIAN ENERGY PERFORMANCE DATA		CANADA Energy Star 2011			
Grille Option	Glazing Thickness	Glazing Option	U-Value	Solar Heat Gain Coefficient	Visible Light Transmittance	Condensation Resistance Rating	N	NC	SC	S	U-Value (metric)	Energy Rating	A	B	C	D
No Grilles	3/4"	Insul	0.45	0.56	0.59	44					2.56	16				
	3/4"	Insul Low E	0.32	0.30	0.52	55		Y	Y		1.82	18	Y			
	3/4"	Insul Low E w/Argon	0.29	0.30	0.52	59	Y	Y	Y		1.65	21	Y			
	3/4"	Insul Low E 240	0.32	0.19	0.29	55		Y	Y	Y	1.82	11	Y			
	3/4"	Insul Low E 240 w/Argon	0.29	0.19	0.29	59	Y	Y	Y	Y	1.65	15	Y			
	3/4"	Zo-e-shield 5	0.31	0.20	0.46	56		Y	Y	Y	1.76	13	Y			
	3/4"	Zo-e-shield 5 w/Argon	0.28	0.20	0.46	60	Y	Y	Y	Y	1.59	17	Y	Y		
	3/4"	Zo-e-shield 5 Extreme	0.28	0.19	0.42	44	Y	Y	Y	Y	1.59	16	Y	Y		
	3/4"	Zo-e-shield 5 Extreme w/Argon	0.25	0.19	0.42	48	Y	Y	Y	Y	1.42	20	Y	Y	Y	
	3/4"	Zo-e-shield 6	0.31	0.20	0.46	58		Y	Y	Y	1.76	13	Y			
	3/4"	Zo-e-shield 6 w/Argon	0.28	0.20	0.46	61	Y	Y	Y	Y	1.59	17	Y	Y		
	1"	Zo-e-shield 7	0.26	0.19	0.37	66	Y	Y	Y	Y	1.48	19	Y	Y		
	1"	Zo-e-shield 7 w/Argon	0.22	0.18	0.37	71	Y	Y	Y	Y	1.25	23	Y	Y	Y	
	1-3/8"	Zo-e-shield 8	0.22	0.18	0.37	70	Y	Y	Y	Y	1.25	23	Y	Y	Y	
	1-3/8"	Zo-e-shield 8 w/Argon	0.20	0.18	0.37	73	Y	Y	Y	Y	1.14	26	Y	Y	Y	Y
5/8" - 13/16" GIA	3/4"	Insul	0.45	0.51	0.54	44					2.56	13				
	3/4"	Insul Low E	0.32	0.28	0.47	55		Y	Y		1.82	16	Y			
	3/4"	Insul Low E w/Argon	0.29	0.28	0.47	59	Y	Y	Y		1.65	20	Y			
	3/4"	Insul Low E 240	0.32	0.18	0.26	55		Y	Y	Y	1.82	11	Y			
	3/4"	Insul Low E 240 w/Argon	0.29	0.17	0.26	59	Y	Y	Y	Y	1.65	14	Y			
	3/4"	Zo-e-shield 5	0.31	0.19	0.42	56		Y	Y	Y	1.76	12	Y			
	3/4"	Zo-e-shield 5 w/Argon	0.28	0.18	0.42	60	Y	Y	Y	Y	1.59	16	Y	Y		
	3/4"	Zo-e-shield 5 Extreme	0.28	0.17	0.38	44	Y	Y	Y	Y	1.59	15	Y	Y		
	3/4"	Zo-e-shield 5 Extreme w/Argon	0.25	0.17	0.38	48	Y	Y	Y	Y	1.42	19	Y	Y	Y	
	3/4"	Zo-e-shield 6	0.31	0.18	0.41	58		Y	Y	Y	1.76	12	Y			
	3/4"	Zo-e-shield 6 w/Argon	0.28	0.18	0.41	61	Y	Y	Y	Y	1.59	16	Y	Y		
	1"	Zo-e-shield 7	0.26	0.17	0.34	66	Y	Y	Y	Y	1.48	17	Y	Y		
	1"	Zo-e-shield 7 w/Argon	0.22	0.17	0.34	71	Y	Y	Y	Y	1.25	22	Y	Y	Y	
	1-3/8"	Zo-e-shield 8	0.22	0.18	0.37	70	Y	Y	Y	Y	1.25	23	Y	Y	Y	
	1-3/8"	Zo-e-shield 8 w/Argon	0.20	0.18	0.37	73	Y	Y	Y	Y	1.14	26	Y	Y	Y	Y

[a] - Total unit calculations are derived from computer simulations that are then validated by 3rd party testing in accordance with NFRC 100-04.

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EnduraShield Fiberglass Awning Windows - Fiberglass Interiors (Product ID 5202) Thermal Performance Data

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ENERGY PERFORMANCE DATA NFRC TOTAL UNIT CALCULATIONS [a]							U.S. Energy Star 2011				CANADIAN ENERGY PERFORMANCE DATA		CANADA Energy Star 2011			
Grille Option	Glazing Thickness	Glazing Option	U-Value	Solar Heat Gain Coefficient	Visible Light Transmittance	Condensation Resistance Rating	N	NC	SC	S	U-Value (metric)	Energy Rating	A	B	C	D
Over 7/8" GIA or SDL	3/4"	Insul	0.45	0.46	0.48	44					2.56	11				
	3/4"	Insul Low E	0.32	0.25	0.42	55		Y	Y	Y	1.82	15	Y			
	3/4"	Insul Low E w/Argon	0.29	0.25	0.42	59	Y	Y	Y	Y	1.65	18	Y			
	3/4"	Insul Low E 240	0.32	0.16	0.23	55		Y	Y	Y	1.82	9	Y			
	3/4"	Insul Low E 240 w/Argon	0.29	0.16	0.23	59	Y	Y	Y	Y	1.65	13	Y			
	3/4"	Zo-e-shield 5	0.31	0.17	0.38	56		Y	Y	Y	1.76	11	Y			
	3/4"	Zo-e-shield 5 w/Argon	0.28	0.17	0.38	60	Y	Y	Y	Y	1.59	15	Y	Y		
	3/4"	Zo-e-shield 5 Extreme	0.28	0.16	0.34	44	Y	Y	Y	Y	1.59	14	Y	Y		
	3/4"	Zo-e-shield 5 Extreme w/Argon	0.25	0.16	0.34	48	Y	Y	Y	Y	1.42	18	Y	Y	Y	
	3/4"	Zo-e-shield 6	0.31	0.17	0.37	58		Y	Y	Y	1.76	11	Y			
	3/4"	Zo-e-shield 6 w/Argon	0.28	0.17	0.37	61	Y	Y	Y	Y	1.59	15	Y	Y		
	1"	Zo-e-shield 7	0.26	0.16	0.30	66	Y	Y	Y	Y	1.48	17	Y	Y		
	1"	Zo-e-shield 7 w/Argon	0.22	0.16	0.30	71	Y	Y	Y	Y	1.25	22	Y	Y	Y	
	1-3/8"	Zo-e-shield 8	0.22	0.18	0.37	70	Y	Y	Y	Y	1.25	23	Y	Y	Y	
	1-3/8"	Zo-e-shield 8 w/Argon	0.20	0.18	0.37	73	Y	Y	Y	Y	1.14	26	Y	Y	Y	Y

[a] - Total unit calculations are derived from computer simulations that are then validated by 3rd party testing in accordance with NFRC 100-04.

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