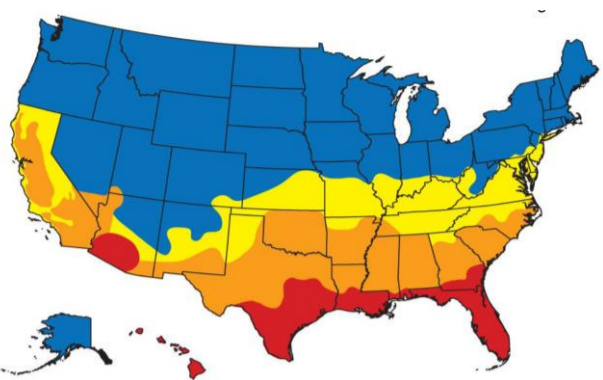


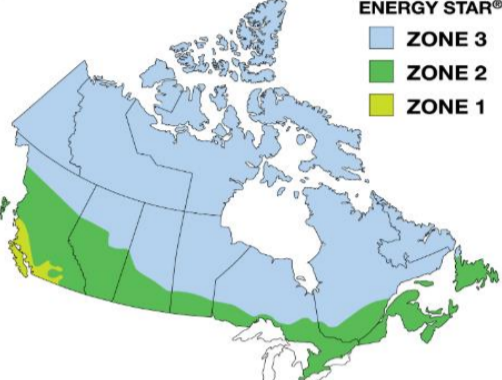
Thermal Performance Data

Signature Casement Windows - Operating (8219)

WEATHER SHIELD.

WINDOWS & DOORS

US Qualification Criteria	Climate Zone	U-Value	SHGC	
 <p>As of January 2016</p>	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		

Canadian Qualification Criteria	Climate Zone	U-Value	or	Energy Rating
 <p>As of February 2015</p>	Zone 1	≤ 1.60		≥ 25
	Zone 2	≤ 1.40		≥ 29
	Zone 3	≤ 1.20		≥ 34
	Air Leakage ≤ 0.3 cfm/ft ²			

U-Value

A measurement of how much energy a material conducts. The lower the U-Value, the greater the insulating effect.

Solar Heat Gain Coefficient (SHGC)

Measures how well a window or door prevents heat from passing through it. The lower a window or door's SHGC, the less heat it allows to pass through it.

Visible Light Transmittance

The amount of light in the visible portion of the spectrum that passes through a glazing material.

Condensation Resistance Rating

Measures how well a window resists the formation of condensation on the inside surface. The higher the number the better resistance to condensation.

Energy Rating

A value demonstrating the balance between U-Value, SHGC and air leakage. The higher the number, the more efficient the product.

R-Value

A measurement of how much a material resists heat transfer.

A higher R-Value means a greater insulating effect and a lower rate of heat flow out of the home.

While **R-value** measures resistance to heat transfer, **U-value** measures the rate of heat transfer.

In simple terms, **U-value** is the mathematical reciprocal of **R-value**; that is, **U = 1/R and R = 1/U**.

^a Total Unit calculations are derived from computer simulations that are then verified by 3rd party testing in accordance with NFRC 100, NFRC 200, and NFRC 500.

^b Published values reflect 3mm/3mm glass lite thicknesses.

ENERGY PERFORMANCE DATA								ENERGY STAR		CANADIAN ENERGY PERFORMANCE DATA				ENERGY STAR					
Signature Casement Windows - Operating (8219)								US ENERGY STAR V 6.0						CANADA ENERGY STAR v 4.1					
Grille Option	Glazing thickness	aNFRC Total Unit Calculations bGlazing Option	CPD #	U-Value	Solar Heat Gain Coefficient	Visible Light Transmittance	Condensation Resistance Rating	N	NC	SC	S	U-Value (metric)	Maximum Air Leakage L/s/m2	Air Infiltration/Exfiltration Average	Energy Rating	1	2	3	
No GIA or SDL	3/4"	Clear Insul	WEA-N-320-00185-00001	0.45	0.56	0.59	42					2.56	0.6	0.05	16				
	3/4"	Insul Low-E	WEA-N-320-00188-00001	0.33	0.31	0.52	54					1.87	0.6	0.05	17				
	3/4"	Insul Low E w/Argon	WEA-N-320-00234-00001	0.30	0.30	0.52	57		Y			1.70	0.6	0.05	20				
	3/4"	Passive Solar	WEA-N-320-00194-00001	0.33	0.47	0.57	53					1.87	0.6	0.05	26	Y			
	3/4"	Passive Solar w/Argon	WEA-N-320-00240-00001	0.30	0.47	0.57	57	Y				1.70	0.6	0.05	30	Y	Y		
	3/4"	Passive Solar Extreme	WEA-N-320-00197-00001	0.29	0.45	0.56	42	Y				1.65	0.6	0.05	30	Y	Y		
	3/4"	Passive Solar Extreme w/Argon	WEA-N-320-00243-00001	0.26	0.45	0.56	45	Y				1.48	0.6	0.05	33	Y	Y		
	3/4"	Zo-e-shield 5	WEA-N-320-00191-00001	0.32	0.21	0.46	54				Y		1.82	0.6	0.05	12			
	3/4"	Zo-e-shield 5 w/ Argon	WEA-N-320-00237-00001	0.29	0.20	0.46	58		Y	Y	Y		1.65	0.6	0.05	15			
	3/4"	Zo-e-shield 5 Extreme	WEA-N-320-00206-00001	0.28	0.20	0.45	43		Y	Y	Y		1.59	0.6	0.05	17	Y		
	3/4"	Zo-e-shield 5 Extreme w/ Argon	WEA-N-320-00252-00001	0.25	0.20	0.45	46	Y	Y	Y	Y		1.42	0.6	0.05	20	Y		
	3/4"	Zo-e-shield 6	WEA-N-320-00215-00001	0.34	0.21	0.46	51				Y		1.93	0.6	0.05	10			
	3/4"	Zo-e-shield 6 w/ Argon	WEA-N-320-00258-00001	0.30	0.20	0.46	55		Y	Y	Y		1.70	0.6	0.05	14			
	3/4"	Zo-e SafeGuard Certified	WEA-N-320-00224-00001	0.34	0.21	0.46	52				Y		1.93	0.6	0.05	10			
	3/4"	Zo-e SafeGuard Certified w/ Argon	WEA-N-320-00267-00001	0.30	0.20	0.46	56		Y	Y	Y		1.70	0.6	0.05	14			
	1"	Zo-e-shield 7	WEA-N-320-00230-00001	0.26	0.19	0.37	63	Y	Y	Y	Y		1.48	0.6	0.05	18	Y		
	1"	Zo-e-shield 7 w/ Argon	WEA-N-320-00273-00001	0.23	0.18	0.37	66	Y	Y	Y	Y		1.31	0.6	0.05	22	Y	Y	
	3/4"	Insul Low-E 240	WEA-N-320-00200-00001	0.33	0.19	0.29	54				Y		1.87	0.6	0.05	10			
	3/4"	Insul Low-E 240 w/Argon	WEA-N-320-00246-00001	0.30	0.19	0.29	57		Y	Y	Y		1.70	0.6	0.05	14			
	3/4"	Insul Low-E 340	WEA-N-320-00203-00001	0.32	0.14	0.28	54				Y		1.82	0.6	0.05	8			
3/4"	Insul Low-E 340 w/Argon	WEA-N-320-00249-00001	0.29	0.13	0.28	58		Y	Y	Y		1.65	0.6	0.05	11				
3/4"	Bronze Low E	WEA-N-320-00188-00011	0.33	0.29	0.38	54						1.87	0.6	0.05	16				
3/4"	Bronze Low E w/Argon	WEA-N-320-00234-00011	0.30	0.29	0.38	57		Y				1.70	0.6	0.05	19				
Less Than 1" GIA or SDL	3/4"	Clear Insul	WEA-N-320-00185-00002	0.45	0.51	0.54	42					2.56	0.6	0.05	13				
	3/4"	Insul Low-E	WEA-N-320-00188-00002	0.33	0.28	0.47	54					1.87	0.6	0.05	15				
	3/4"	Insul Low E w/Argon	WEA-N-320-00234-00002	0.30	0.28	0.47	57		Y			1.70	0.6	0.05	19				
	3/4"	Passive Solar	WEA-N-320-00194-00002	0.33	0.45	0.52	54					1.87	0.6	0.05	25				
	3/4"	Passive Solar w/Argon	WEA-N-320-00240-00002	0.30	0.45	0.52	57	Y				1.70	0.6	0.05	29	Y			
	3/4"	Passive Solar Extreme	WEA-N-320-00197-00002	0.29	0.41	0.50	42	Y				1.65	0.6	0.05	27	Y			
	3/4"	Passive Solar Extreme w/Argon	WEA-N-320-00243-00002	0.26	0.41	0.50	45	Y				1.48	0.6	0.05	31	Y	Y		
	3/4"	Zo-e-shield 5	WEA-N-320-00191-00002	0.32	0.19	0.42	54				Y		1.82	0.6	0.05	11			
	3/4"	Zo-e-shield 5 w/ Argon	WEA-N-320-00237-00002	0.29	0.19	0.42	58		Y	Y	Y		1.65	0.6	0.05	15			
	3/4"	Zo-e-shield 5 Extreme	WEA-N-320-00206-00002	0.28	0.18	0.41	43		Y	Y	Y		1.59	0.6	0.05	15			
	3/4"	Zo-e-shield 5 Extreme w/ Argon	WEA-N-320-00252-00002	0.25	0.18	0.41	46	Y	Y	Y	Y		1.42	0.6	0.05	19	Y		
	3/4"	Zo-e-shield 6	WEA-N-320-00216-00001	0.36	0.19	0.41	51				Y		2.04	0.6	0.05	6			
	3/4"	Zo-e-shield 6 w/ Argon	WEA-N-320-00259-00001	0.32	0.19	0.41	55				Y		1.82	0.6	0.05	11			
	3/4"	Zo-e SafeGuard Certified	WEA-N-320-00225-00001	0.36	0.19	0.41	52				Y		2.04	0.6	0.05	6			
	3/4"	Zo-e SafeGuard Certified w/ Argon	WEA-N-320-00268-00001	0.31	0.19	0.41	56				Y		1.76	0.6	0.05	12			
	1"	Zo-e-shield 7	WEA-N-320-00231-00001	0.26	0.17	0.34	63	Y	Y	Y	Y		1.48	0.6	0.05	17	Y		
	1"	Zo-e-shield 7 w/ Argon	WEA-N-320-00274-00001	0.23	0.17	0.34	66	Y	Y	Y	Y		1.31	0.6	0.05	21	Y	Y	
	3/4"	Insul Low-E 240	WEA-N-320-00200-00002	0.33	0.18	0.26	54				Y		1.87	0.6	0.05	9			
	3/4"	Insul Low-E 240 w/Argon	WEA-N-320-00246-00002	0.30	0.17	0.26	57		Y	Y	Y		1.70	0.6	0.05	12			
	3/4"	Insul Low-E 340	WEA-N-320-00203-00002	0.32	0.13	0.25	54				Y		1.82	0.6	0.05	8			
3/4"	Insul Low-E 340 w/Argon	WEA-N-320-00249-00002	0.29	0.12	0.25	58		Y	Y	Y		1.65	0.6	0.05	11				
3/4"	Bronze Low E	WEA-N-320-00188-00012	0.33	0.27	0.35	54						1.87	0.6	0.05	15				
3/4"	Bronze Low E w/Argon	WEA-N-320-00234-00012	0.30	0.26	0.35	57		Y				1.70	0.6	0.05	18				
1" Or Over GIA or SDL	3/4"	Clear Insul	WEA-N-320-00185-00003	0.45	0.47	0.48	42					2.56	0.6	0.05	11				
	3/4"	Insul Low-E	WEA-N-320-00188-00003	0.33	0.25	0.42	54				Y		1.87	0.6	0.05	13			
	3/4"	Insul Low E w/Argon	WEA-N-320-00234-00003	0.30	0.25	0.42	57		Y	Y	Y		1.70	0.6	0.05	17			
	3/4"	Passive Solar	WEA-N-320-00194-00003	0.33	0.41	0.47	54					1.87	0.6	0.05	23				
	3/4"	Passive Solar w/Argon	WEA-N-320-00240-00003	0.30	0.41	0.47	57					1.70	0.6	0.05	26	Y			
	3/4"	Passive Solar Extreme	WEA-N-320-00197-00003	0.29	0.37	0.45	42	Y	Y			1.65	0.6	0.05	25	Y			
	3/4"	Passive Solar Extreme w/Argon	WEA-N-320-00243-00003	0.26	0.38	0.45	45	Y	Y			1.48	0.6	0.05	29	Y	Y		
	3/4"	Zo-e-shield 5	WEA-N-320-00191-00003	0.32	0.17	0.38	54				Y		1.82	0.6	0.05	10			
	3/4"	Zo-e-shield 5 w/ Argon	WEA-N-320-00237-00003	0.29	0.17	0.38	58		Y	Y	Y		1.65	0.6	0.05	14			
	3/4"	Zo-e-shield 5 Extreme	WEA-N-320-00206-00003	0.28	0.17	0.37	43		Y	Y	Y		1.59	0.6	0.05	15			
	3/4"	Zo-e-shield 5 Extreme w/ Argon	WEA-N-320-00252-00003	0.25	0.17	0.37	46	Y	Y	Y	Y		1.42	0.6	0.05	19	Y		
	3/4"	Zo-e-shield 6	WEA-N-320-00216-00002	0.36	0.17	0.37	51				Y		2.04	0.6	0.05	5			
	3/4"	Zo-e-shield 6 w/ Argon	WEA-N-320-00259-00002	0.32	0.17	0.37	55				Y		1.82	0.6	0.05	10			
	3/4"	Zo-e SafeGuard Certified	WEA-N-320-00225-00002	0.36	0.17	0.37	52				Y		2.04	0.6	0.05	5			
	3/4"	Zo-e SafeGuard Certified w/ Argon	WEA-N-320-00268-00002	0.31	0.17	0.37	56				Y		1.76	0.6	0.05	11			
	1"	Zo-e-shield 7	WEA-N-320-00231-00002	0.26	0.16	0.30	63	Y	Y	Y	Y		1.48	0.6	0.05	17	Y		
	1"	Zo-e-shield 7 w/ Argon	WEA-N-320-00274-00002	0.23	0.16	0.30	66	Y	Y	Y	Y		1.31	0.6	0.05	20	Y	Y	
	3/4"	Insul Low-E 240	WEA-N-320-00200-00003	0.33	0.16	0.24	54				Y		1.87	0.6	0.05	8			
	3/4"	Insul Low-E 240 w/Argon	WEA-N-320-00246-00003	0.30	0.16	0.24	57		Y	Y	Y		1.70	0.6	0.05	12			
	3/4"	Insul Low-E 340	WEA-N-320-00203-00003	0.32	0.12	0.23	54				Y		1.82	0.6	0.05	7			
3/4"	Insul Low-E 340 w/Argon	WEA-N-320-00249-00003	0.29	0.11	0.23	58		Y	Y	Y		1.65	0.6	0.05	10				
3/4"	Bronze Low E	WEA-N-320-00188-00013	0.33	0.24	0.31	54				Y		1.87	0.6	0.05	13				
3/4"	Bronze Low E w/Argon	WEA-N-320-00234-00013	0.30	0.24	0.31	57		Y	Y	Y		1.70	0.6	0.05	17				