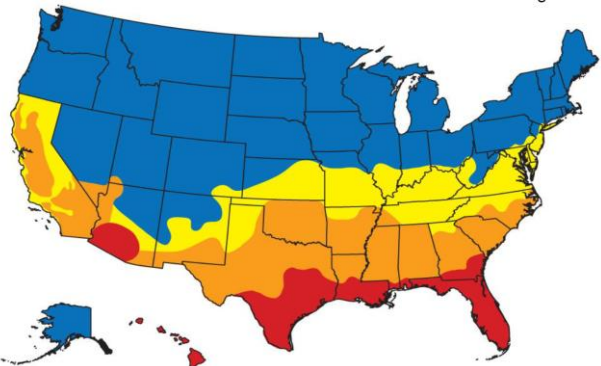


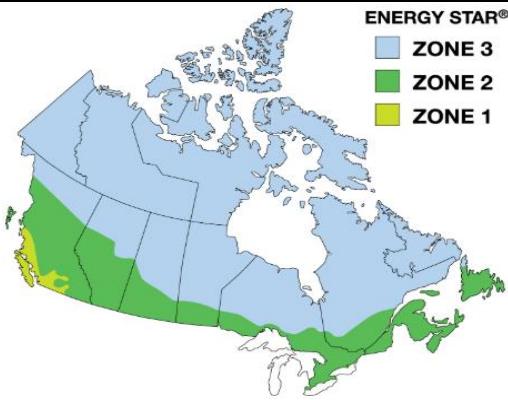
Thermal Performance Data

Signature Casement Windows - Picture/Transom (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 - Picture/Transom (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-322-00253-00001 | 0.46 | 0.64 | 0.67 | 42 | | | | | 2.61 | 0.6 | 0.05 | 20 | | | | |
| | 3/4" | Insul Low-E | WEA-N-322-00257-00001 | 0.32 | 0.34 | 0.59 | 53 | | | | | 1.82 | 0.6 | 0.05 | 20 | | | | |
| | 3/4" | Insul Low E w/Argon | WEA-N-322-00314-00001 | 0.28 | 0.34 | 0.59 | 57 | Y | Y | | | 1.59 | 0.6 | 0.05 | 25 | Y | | | |
| | 3/4" | Passive Solar | WEA-N-322-00265-00001 | 0.32 | 0.56 | 0.65 | 53 | | | | | 1.82 | 0.6 | 0.05 | 32 | Y | Y | | |
| | 3/4" | Passive Solar w/Argon | WEA-N-322-00322-00001 | 0.29 | 0.56 | 0.65 | 57 | Y | | | | 1.65 | 0.6 | 0.05 | 36 | Y | Y | Y | |
| | 3/4" | Passive Solar Extreme | WEA-N-322-00269-00001 | 0.27 | 0.51 | 0.63 | 41 | Y | | | | 1.53 | 0.6 | 0.05 | 36 | Y | Y | Y | |
| | 3/4" | Passive Solar Extreme w/Argon | WEA-N-322-00326-00001 | 0.24 | 0.51 | 0.63 | 44 | Y | | | | 1.36 | 0.6 | 0.05 | 40 | Y | Y | Y | |
| | 3/4" | Zo-e-shield 5 | WEA-N-322-00261-00001 | 0.31 | 0.23 | 0.53 | 54 | | | | Y | | 1.76 | 0.6 | 0.05 | 15 | | | |
| | 3/4" | Zo-e-shield 5 w/ Argon | WEA-N-322-00318-00001 | 0.27 | 0.23 | 0.53 | 57 | Y | Y | Y | Y | | 1.53 | 0.6 | 0.05 | 20 | Y | | |
| | 3/4" | Zo-e-shield 5 Extreme | WEA-N-322-00281-00001 | 0.26 | 0.22 | 0.52 | 42 | Y | Y | Y | Y | | 1.48 | 0.6 | 0.05 | 20 | Y | | |
| | 3/4" | Zo-e-shield 5 Extreme w/ Argon | WEA-N-322-00338-00001 | 0.23 | 0.22 | 0.52 | 45 | Y | Y | Y | Y | | 1.31 | 0.6 | 0.05 | 24 | Y | Y | |
| | 3/4" | Zo-e-shield 6 | WEA-N-322-00291-00001 | 0.33 | 0.23 | 0.52 | 51 | | | | Y | | 1.87 | 0.6 | 0.05 | 12 | | | |
| | 3/4" | Zo-e-shield 6 w/ Argon | WEA-N-322-00345-00001 | 0.28 | 0.23 | 0.52 | 55 | | Y | Y | Y | | 1.59 | 0.6 | 0.05 | 18 | Y | | |
| | 3/4" | Zo-e SafeGuard Certified | WEA-N-322-00300-00001 | 0.33 | 0.23 | 0.52 | 51 | | | | Y | | 1.87 | 0.6 | 0.05 | 12 | | | |
| | 3/4" | Zo-e SafeGuard Certified w/ Argon | WEA-N-322-00354-00001 | 0.28 | 0.23 | 0.52 | 55 | | Y | Y | Y | | 1.59 | 0.6 | 0.05 | 18 | Y | | |
| | 1" | Zo-e-shield 7 | WEA-N-322-00306-00001 | 0.24 | 0.21 | 0.42 | 63 | Y | Y | Y | Y | | 1.36 | 0.6 | 0.05 | 22 | Y | Y | |
| | 1" | Zo-e-shield 7 w/ Argon | WEA-N-322-00360-00001 | 0.20 | 0.21 | 0.42 | 67 | Y | Y | Y | Y | | 1.14 | 0.6 | 0.05 | 27 | Y | Y | Y |
| | 3/4" | Insul Low-E 240 | WEA-N-322-00273-00001 | 0.32 | 0.22 | 0.33 | 53 | | | | Y | | 1.82 | 0.6 | 0.05 | 13 | | | |
| | 3/4" | Insul Low-E 240 w/Argon | WEA-N-322-00330-00001 | 0.28 | 0.21 | 0.33 | 56 | | Y | Y | Y | | 1.59 | 0.6 | 0.05 | 17 | Y | | |
| | 3/4" | Insul Low-E 340 | WEA-N-322-00277-00001 | 0.31 | 0.15 | 0.32 | 54 | | | | Y | | 1.76 | 0.6 | 0.05 | 10 | | | |
| 3/4" | Insul Low-E 340 w/Argon | WEA-N-322-00334-00001 | 0.28 | 0.15 | 0.32 | 57 | | Y | Y | Y | | 1.59 | 0.6 | 0.05 | 14 | | | | |
| 3/4" | Bronze Low E | WEA-N-322-00257-00011 | 0.32 | 0.33 | 0.43 | 53 | | | | | | 1.82 | 0.6 | 0.05 | 19 | | | | |
| 3/4" | Bronze Low E w/Argon | WEA-N-322-00314-00011 | 0.28 | 0.32 | 0.43 | 57 | Y | Y | | | | 1.59 | 0.6 | 0.05 | 24 | Y | | | |
| Less Than 1" GIA or SDL | 3/4" | Clear Insul | WEA-N-322-00253-00002 | 0.46 | 0.57 | 0.60 | 42 | | | | | 2.61 | 0.6 | 0.05 | 16 | | | | |
| | 3/4" | Insul Low-E | WEA-N-322-00257-00002 | 0.32 | 0.31 | 0.53 | 53 | | | | | 1.82 | 0.6 | 0.05 | 18 | | | | |
| | 3/4" | Insul Low E w/Argon | WEA-N-322-00314-00002 | 0.28 | 0.31 | 0.53 | 57 | | Y | | | 1.59 | 0.6 | 0.05 | 23 | Y | | | |
| | 3/4" | Passive Solar | WEA-N-322-00265-00002 | 0.32 | 0.51 | 0.58 | 53 | | | | | 1.82 | 0.6 | 0.05 | 30 | Y | Y | | |
| | 3/4" | Passive Solar w/Argon | WEA-N-322-00322-00002 | 0.29 | 0.51 | 0.58 | 57 | Y | | | | 1.65 | 0.6 | 0.05 | 33 | Y | Y | | |
| | 3/4" | Passive Solar Extreme | WEA-N-322-00269-00002 | 0.27 | 0.46 | 0.57 | 41 | Y | | | | 1.53 | 0.6 | 0.05 | 33 | Y | Y | | |
| | 3/4" | Passive Solar Extreme w/Argon | WEA-N-322-00326-00002 | 0.24 | 0.46 | 0.57 | 44 | Y | | | | 1.36 | 0.6 | 0.05 | 37 | Y | Y | Y | |
| | 3/4" | Zo-e-shield 5 | WEA-N-322-00261-00002 | 0.31 | 0.21 | 0.47 | 54 | | | | Y | | 1.76 | 0.6 | 0.05 | 13 | | | |
| | 3/4" | Zo-e-shield 5 w/ Argon | WEA-N-322-00318-00002 | 0.27 | 0.21 | 0.47 | 57 | Y | Y | Y | Y | | 1.53 | 0.6 | 0.05 | 19 | Y | | |
| | 3/4" | Zo-e-shield 5 Extreme | WEA-N-322-00281-00002 | 0.26 | 0.20 | 0.46 | 42 | Y | Y | Y | Y | | 1.48 | 0.6 | 0.05 | 19 | Y | | |
| | 3/4" | Zo-e-shield 5 Extreme w/ Argon | WEA-N-322-00338-00002 | 0.23 | 0.20 | 0.46 | 45 | Y | Y | Y | Y | | 1.31 | 0.6 | 0.05 | 23 | Y | Y | |
| | 3/4" | Zo-e-shield 6 | WEA-N-322-00292-00001 | 0.35 | 0.21 | 0.46 | 51 | | | | Y | | 1.99 | 0.6 | 0.05 | 8 | | | |
| | 3/4" | Zo-e-shield 6 w/ Argon | WEA-N-322-00346-00001 | 0.30 | 0.21 | 0.46 | 55 | | Y | Y | Y | | 1.70 | 0.6 | 0.05 | 15 | | | |
| | 3/4" | Zo-e SafeGuard Certified | WEA-N-322-00301-00001 | 0.35 | 0.21 | 0.46 | 51 | | | | Y | | 1.99 | 0.6 | 0.05 | 8 | | | |
| | 3/4" | Zo-e SafeGuard Certified w/ Argon | WEA-N-322-00355-00001 | 0.30 | 0.21 | 0.46 | 55 | | Y | Y | Y | | 1.70 | 0.6 | 0.05 | 15 | | | |
| | 1" | Zo-e-shield 7 | WEA-N-322-00307-00001 | 0.25 | 0.19 | 0.38 | 63 | Y | Y | Y | Y | | 1.42 | 0.6 | 0.05 | 20 | Y | | |
| | 1" | Zo-e-shield 7 w/ Argon | WEA-N-322-00361-00001 | 0.21 | 0.19 | 0.38 | 67 | Y | Y | Y | Y | | 1.19 | 0.6 | 0.05 | 25 | Y | Y | Y |
| | 3/4" | Insul Low-E 240 | WEA-N-322-00273-00002 | 0.32 | 0.20 | 0.29 | 53 | | | | Y | | 1.82 | 0.6 | 0.05 | 12 | | | |
| | 3/4" | Insul Low-E 240 w/Argon | WEA-N-322-00330-00002 | 0.28 | 0.19 | 0.29 | 56 | | Y | Y | Y | | 1.59 | 0.6 | 0.05 | 16 | Y | | |
| | 3/4" | Insul Low-E 340 | WEA-N-322-00277-00002 | 0.31 | 0.14 | 0.28 | 54 | | | | Y | | 1.76 | 0.6 | 0.05 | 9 | | | |
| 3/4" | Insul Low-E 340 w/Argon | WEA-N-322-00334-00002 | 0.28 | 0.14 | 0.28 | 57 | | Y | Y | Y | | 1.59 | 0.6 | 0.05 | 13 | | | | |
| 3/4" | Bronze Low E | WEA-N-322-00257-00012 | 0.32 | 0.30 | 0.39 | 53 | | | | | | 1.82 | 0.6 | 0.05 | 17 | | | | |
| 3/4" | Bronze Low E w/Argon | WEA-N-322-00314-00012 | 0.28 | 0.29 | 0.39 | 57 | | Y | | | | 1.59 | 0.6 | 0.05 | 22 | Y | | | |
| 1" Or Over GIA or SDL | 3/4" | Clear Insul | WEA-N-322-00253-00003 | 0.46 | 0.51 | 0.53 | 42 | | | | | 2.61 | 0.6 | 0.05 | 12 | | | | |
| | 3/4" | Insul Low-E | WEA-N-322-00257-00003 | 0.32 | 0.28 | 0.47 | 53 | | | | | 1.82 | 0.6 | 0.05 | 16 | | | | |
| | 3/4" | Insul Low E w/Argon | WEA-N-322-00314-00003 | 0.28 | 0.28 | 0.47 | 57 | | Y | | | 1.59 | 0.6 | 0.05 | 21 | Y | | | |
| | 3/4" | Passive Solar | WEA-N-322-00265-00003 | 0.32 | 0.45 | 0.51 | 53 | | | | | 1.82 | 0.6 | 0.05 | 26 | Y | | | |
| | 3/4" | Passive Solar w/Argon | WEA-N-322-00322-00003 | 0.29 | 0.45 | 0.51 | 57 | Y | | | | 1.65 | 0.6 | 0.05 | 30 | Y | Y | | |
| | 3/4" | Passive Solar Extreme | WEA-N-322-00269-00003 | 0.27 | 0.41 | 0.50 | 41 | Y | | | | 1.53 | 0.6 | 0.05 | 30 | Y | Y | | |
| | 3/4" | Passive Solar Extreme w/Argon | WEA-N-322-00326-00003 | 0.24 | 0.41 | 0.50 | 44 | Y | | | | 1.36 | 0.6 | 0.05 | 34 | Y | Y | | |
| | 3/4" | Zo-e-shield 5 | WEA-N-322-00261-00003 | 0.31 | 0.19 | 0.42 | 54 | | | | Y | | 1.76 | 0.6 | 0.05 | 12 | | | |
| | 3/4" | Zo-e-shield 5 w/ Argon | WEA-N-322-00318-00003 | 0.27 | 0.19 | 0.42 | 57 | Y | Y | Y | Y | | 1.53 | 0.6 | 0.05 | 17 | Y | | |
| | 3/4" | Zo-e-shield 5 Extreme | WEA-N-322-00281-00003 | 0.26 | 0.18 | 0.41 | 42 | Y | Y | Y | Y | | 1.48 | 0.6 | 0.05 | 18 | Y | | |
| | 3/4" | Zo-e-shield 5 Extreme w/ Argon | WEA-N-322-00338-00003 | 0.23 | 0.18 | 0.41 | 45 | Y | Y | Y | Y | | 1.31 | 0.6 | 0.05 | 22 | Y | Y | |
| | 3/4" | Zo-e-shield 6 | WEA-N-322-00292-00002 | 0.35 | 0.19 | 0.41 | 51 | | | | Y | | 1.99 | 0.6 | 0.05 | 7 | | | |
| | 3/4" | Zo-e-shield 6 w/ Argon | WEA-N-322-00346-00002 | 0.30 | 0.19 | 0.41 | 55 | | Y | Y | Y | | 1.70 | 0.6 | 0.05 | 14 | | | |
| | 3/4" | Zo-e SafeGuard Certified | WEA-N-322-00301-00002 | 0.35 | 0.19 | 0.41 | 51 | | | | Y | | 1.99 | 0.6 | 0.05 | 7 | | | |
| | 3/4" | Zo-e SafeGuard Certified w/ Argon | WEA-N-322-00355-00002 | 0.30 | 0.19 | 0.41 | 55 | | Y | Y | Y | | 1.70 | 0.6 | 0.05 | 14 | | | |
| | 1" | Zo-e-shield 7 | WEA-N-322-00307-00002 | 0.25 | 0.17 | 0.33 | 63 | Y | Y | Y | Y | | 1.42 | 0.6 | 0.05 | 19 | Y | | |
| | 1" | Zo-e-shield 7 w/ Argon | WEA-N-322-00361-00002 | 0.21 | 0.17 | 0.33 | 67 | Y | Y | Y | Y | | 1.19 | 0.6 | 0.05 | 24 | Y | Y | |
| | 3/4" | Insul Low-E 240 | WEA-N-322-00273-00003 | 0.32 | 0.18 | 0.26 | 53 | | | | Y | | 1.82 | 0.6 | 0.05 | 10 | | | |
| | 3/4" | Insul Low-E 240 w/Argon | WEA-N-322-00330-00003 | 0.28 | 0.17 | 0.26 | 56 | | Y | Y | Y | | 1.59 | 0.6 | 0.05 | 15 | | | |
| | 3/4" | Insul Low-E 340 | WEA-N-322-00277-00003 | 0.31 | 0.13 | 0.25 | 54 | | | | Y | | 1.76 | 0.6 | 0.05 | 9 | | | |
| 3/4" | Insul Low-E 340 w/Argon | WEA-N-322-00334-00003 | 0.28 | 0.12 | 0.25 | 57 | | Y | Y | Y | | 1.59 | 0.6 | 0.05 | 12 | | | | |
| 3/4" | Bronze Low E | WEA-N-322-00257-00013 | 0.32 | 0.27 | 0.34 | 53 | | | | | | 1.82 | 0.6 | 0.05 | 16 | | | | |
| 3/4" | Bronze Low E w/Argon | WEA-N-322-00314-00013 | 0.28 | 0.26 | 0.34 | 57 | | Y | | | | 1.59 | 0.6 | 0.05 | 20 | Y | | | |