

SIMPLIFIED WINDOW HEAT LOSS EXAMPLE FOR CENTRAL OREGON

Assumptions:

- R-value of standard double pane window = 2
- U-value = $1/R = 0.5$ BTU per hour per square foot per °F
- Area of windows = 400 square feet
- Degree days for Central Oregon for base temp 65 °F = 7,000
- BTU per therm of natural gas = 80,000 (assuming heating system is approx. 80% efficient)
- Cost per therm = \$1.2

Calculations with no window coverings:

Heat loss per hour per °F = $U \times \text{Area} = .5 \times 400 = 200$

Heat loss per day per °F = $200 \times 24 = 4,800$

Heat loss per heating season = heat loss per day per °F x degree-days for region

Heat loss per heating season = $4,800 \times 7,000 = 33,600,000$ BTU

Therms of natural gas per heating season = 420

Cost per heating season = \$504

Calculations with Duette Architella ¾" Panache Opaque with R-value = 3.7

Now window has combined R-value of 5.7

$U = 1/R = .175$

Heat loss per hour per °F = $.175 \times 400 = 70$ BTU

Heat loss per day per °F = $70 \times 24 = 1,680$ BTU

Heat loss per heating season = $1,680 \times 7,000 = 11,760,000$ BTU

Therms of natural gas per heating season = 147

Cost per heating season = $\$1.20 \times 147 = \176

Savings in natural gas per heating season = \$504 - \$176 = \$328