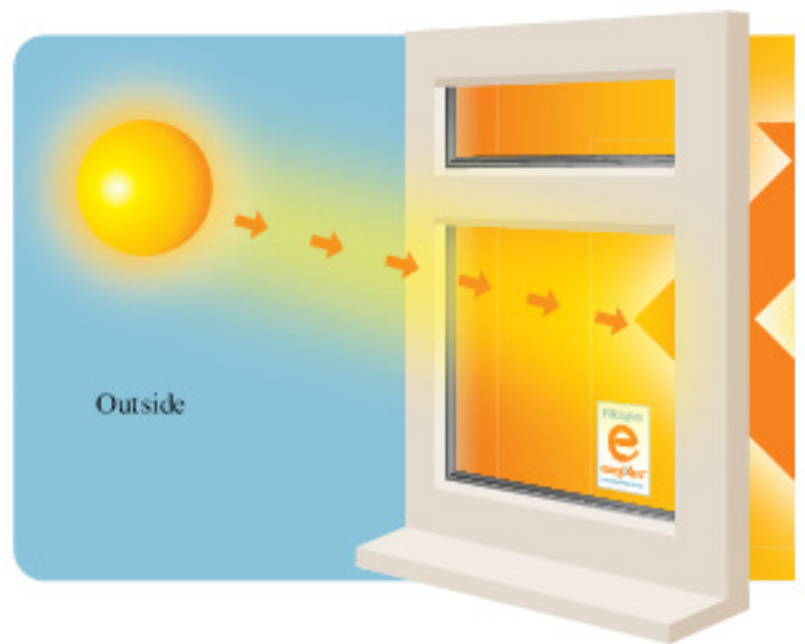
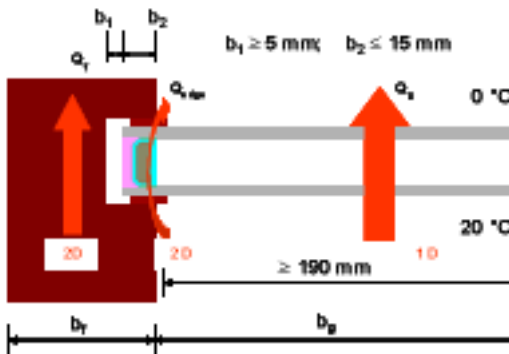


Report on U-value for: Cortizo Casement



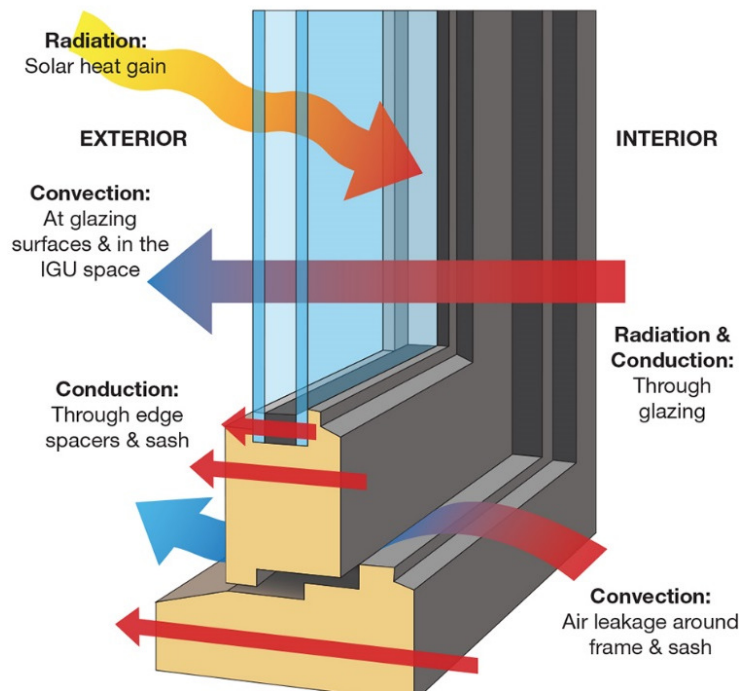
Frame Assessment



Heat transfer through window

Simulation performed using Flixo professional 7.0 thermal bridge analyses

flixo produces thermal-hygro analyses of the component and façade cross-sections, and it also calculates frame U-values according to EN ISO 10077-2. It has been developed by architects, computer scientists and physicists, for architects, planners, energy consultants and building physicists.



A further use of flixo is relevant to hygro analysis, with which, for example, temperature minima on the internal surfaces of a cross-section can be determined in order to avoid the formation of condensed water or mildew.

Flixo analyses two-dimensional component nodes for steady state boundary conditions (room temperatures and thermal transfer coefficients).

Flixo is fully validated thermal bridge software according to EN ISO 10211:2007 and EN ISO 10077-2:2012.

The method of simulation is based on two dimensional numerical computerized simulation calculation of the thermal transmittance of frame profiles and Ψ - value to account for the interaction with various glazing options using finite element methods.

Glass Assessment

The centre pane U-value and g-value has been calculated using Pilkington Spectrum.

The Calculation factors

The whole window U-values are based on 1230mm wide by 1480mm high window. One Opening light and a fixed light side by side with a dividing mullion.

Window Solar Factor (g-value):

This measures the amount of heat gain from sunlight. The Solar Factor is expressed as a number between 0 and 1. A lower Solar Factor means less heat gain. The value used is the whole window g-value (g-window) and not simply the glass g-value (g-glass).

Window Thermal transmittance (U-value):

This measures how good a product is at preventing heat from escaping. The lower the U-value the better the product is at preventing heat escaping. The value used is the whole window U-value (Uwindow) and not simply the glass U-value (Uglass).

Window Air Leakage (L50 value)

The factor L50 in the formula is the air leakage factor. A lower number means less uncontrolled air leakage and heat loss. Windows with high air leakage lose more heat.

Validation/Testing

The software is validated and conforms to both two-dimensional cases of ISO 10211:2007, Annex A. The test cases are available on <http://www.flixo.com>. The software is validated conform the ten cases of ISO 10077:2003, Annex D. The test cases are available on <http://www.flixo.com>.

Results

U value achieved	0.9W/(m ² .k)
Glass unit u-value	0.7 W/(m ² .k)
Glass Size	4/8/4/8/4 - Triple Glazed -28mm
Glass specification	Pilkington Soft Coat, Pilkington Soft Coat , Clear
Spacer Bar	Warm Edge Thermal Spacer

Standards Used:

BS EN 10077-1:2006 - Thermal performance of windows, doors and shutters

BS EN 10077-2:2012 - Thermal performance of windows, doors and shutters

BS EN 673:2011 - Glass in building. Determination of thermal transmittance (U value).

Simulation Run

