

Summary of U Value Calculation

Undertaken by Eric Greenhow, of Westport

Reference Number: **ABNZ2**

Uvalue override reference: Window, Fixed Light with Opener, Wood Frame (Softwood)

Calculation Date: 05/12/2011. Calculated following the principles of EN ISO 10077-1:2006

BASIC DIMENSIONS

Width of Opening: 1230 mm

Height of Opening: 1480 mm

Angle of Glazing: 0 degrees (from vertical)

Centreline of Mullion/Divider: 615 mm

Space	Width	Gas Type	Air
1	12 mm	Argon: 95%	5%
2	12 mm	Argon: 95%	–

WINDOW GLAZING PROFILE

Number of Spaces: 2 (Triple Glazing)

Gas Temperature: 283.15 K (10°C)

Normal Emissivity of Internal Glass Surface: 0.89

Space	e1	e2
1	0.89 (0.84 corr)	0.03 (0.04 corr)
2	0.89 (0.84 corr)	0.03 (0.04 corr)

Pane Thickness: 1 = 4 mm 2 = 4 mm 3 = 4 mm

Total Thickness of Glazing: 36 mm

External Heat Transfer Coefficient: 25 W/m².K

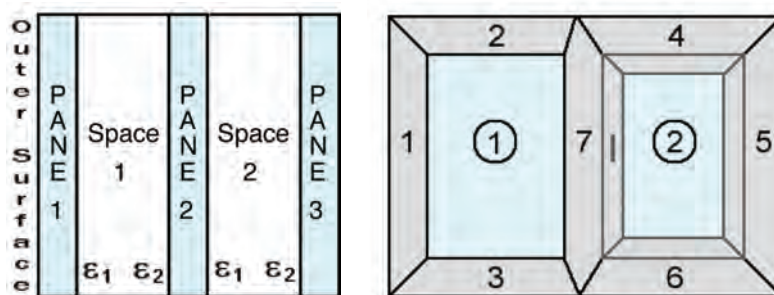
Internal Heat Transfer Coefficient: 7.7 W/m².K

CONFIGURATION OF UNIT: FRAME & PANE AREAS

Numbers on each frame edge correspond to the

Frame Side in the frame table below, and Circled

Numbers refer to the Pane in the panes table below.



WINDOW FRAME

Side	A f,i	A f,e	A frame	Int. Frame W	Ext. Frame W	Thickness	U frame
1	0.082 m ²	0.082 m ²	0.082 m ²	58 mm	58 mm	92.0 mm	1.55 W/m ² .K
2	0.033 m ²	0.033 m ²	0.033 m ²	58 mm	58 mm	92.0 mm	1.55 W/m ² .K
3	0.039 m ²	0.039 m ²	0.039 m ²	68 mm	68 mm	92.0 mm	1.55 W/m ² .K
4	0.056 m ²	0.056 m ²	0.056 m ²	109 mm	109 mm	92.0 mm	1.55 W/m ² .K
5	0.149 m ²	0.149 m ²	0.149 m ²	109 mm	109 mm	92.0 mm	1.55 W/m ² .K
6	0.061 m ²	0.061 m ²	0.061 m ²	119 mm	119 mm	92.0 mm	1.55 W/m ² .K
7	0.164 m ²	0.164 m ²	0.164 m ²	119 mm	119 mm	92.0 mm	1.55 W/m ² .K

Σ A frame : 0.584 m²

Σ A frame . U frame : 0.905 W/K

WINDOW PANES

The values of U glass have been calculated using BS EN 673:1998.

Pane	Type	A glass	U glass	Perimeter	Spacer	PSI
1	Glass	0.720 m ²	0.488 W/m ² .K	3.771 m	Swisspacer V*	0.032
2	Glass	0.516 m ²	0.488 W/m ² .K	3.329 m	Swisspacer V*	0.032

Σ A glass : 1.236 m²

Σ A glass . U glass : 0.603 W/K

Σ I glass . ψ glass : 0.225 W/K

Total Thermal Conductance of Glazing: 0.53W/m².K

Final U Value for Unit: 1.0 W/m².K

* Spacer New Zealand equivalent

Summary of U Value Calculation

Undertaken by Eric Greenhow, of Westport

Reference Number: **ABNZ6**

Uvalue override reference: Window, Fixed Light with Opener, Wood Frame (Softwood)

Calculation Date: 05/12/2011. Calculated following the principles of EN ISO 10077-1:2006

BASIC DIMENSIONS

Width of Opening: 1230 mm

Height of Opening: 1480 mm

Angle of Glazing: 0 degrees (from vertical)

Centreline of Mullion/Divider: 615 mm

WINDOW GLAZING PROFILE

Number of Spaces: 1 (Double Glazing)

Gas Temperature: 283.15 K (10°C)

Normal Emissivity of Internal Glass Surface: 0.89

Total Thickness of Glazing: 28 mm

External Heat Transfer Coefficient: 25 W/m².K

Internal Heat Transfer Coefficient: 7.7 W/m².K

CONFIGURATION OF UNIT: FRAME & PANE AREAS

Numbers on each frame edge correspond to the

Frame Side in the frame table below, and Circled

Numbers refer to the Pane in the panes table below.

Space	Width	Gas Type	Air
1	20 mm	Argon: 95%	5%

Space	e1	e2
1	0.89 (0.84 corr)	0.03 (0.04 corr)

Pane Thickness: 1 = 4 mm 2 = 4 mm

WINDOW FRAME

Side	A f,i	A f,e	A frame	Int. Frame W	Ext. Frame W	Thickness	U frame
1	0.082 m ²	0.082 m ²	0.082 m ²	58 mm	58 mm	92.0 mm	1.55 W/m ² .K
2	0.033 m ²	0.033 m ²	0.033 m ²	58 mm	58 mm	92.0 mm	1.55 W/m ² .K
3	0.039 m ²	0.039 m ²	0.039 m ²	68 mm	68 mm	92.0 mm	1.55 W/m ² .K
4	0.056 m ²	0.056 m ²	0.056 m ²	109 mm	109 mm	92.0 mm	1.55 W/m ² .K
5	0.149 m ²	0.149 m ²	0.149 m ²	109 mm	109 mm	92.0 mm	1.55 W/m ² .K
6	0.061 m ²	0.061 m ²	0.061 m ²	119 mm	119 mm	92.0 mm	1.55 W/m ² .K
7	0.164 m ²	0.164 m ²	0.164 m ²	119 mm	119 mm <td 92.0 mm	1.55 W/m ² .K	

Σ A frame : 0.584 m²

Σ A frame . U frame : 0.905 W/K

WINDOW PANES

The values of U glass have been calculated using BS EN 673:1998.

Pane	Type	A glass	U glass	Perimeter	Spacer	PSI
1	Glass	0.720 m ²	1.149 W/m ² .K	3.771 m	Swisspacer V*	0.033
2	Glass	0.516 m ²	1.149 W/m ² .K	3.329 m	Swisspacer V*	0.033

Σ A glass : 1.236 m²

Σ A glass . U glass : 1.420 W/K

Σ I glass . ψ glass : 0.236 W/K

Total Thermal Conductance of Glazing: 1.43W/m².K

Final U Value for Unit: 1.4 W/m².K

* Spacer New Zealand equivalent