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## REHAU ONLINE THERMAL CALCULATOR USER GUIDE

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## USER GUIDE

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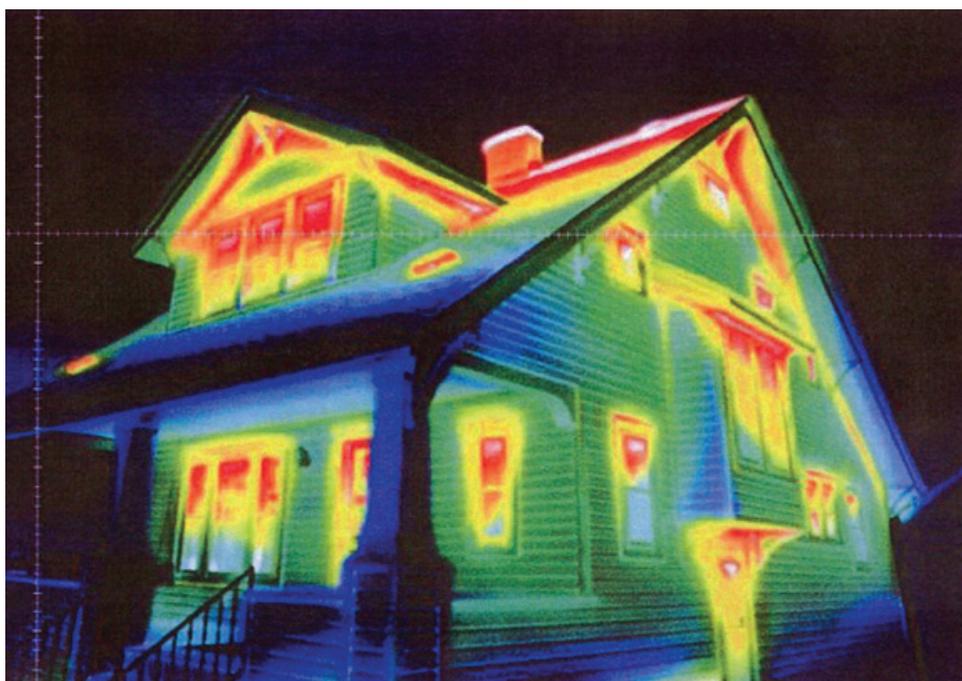
### General Description

The REHAU Online Thermal Calculator has been designed to help the user determine the energy performance of a specific window accurately and efficiently and also produce the necessary information in order to satisfy building control with regards to Part L of the Building Regulations.

The calculator performs two functions, calculating U values for windows and doors and also calculating Window Energy Ratings (WER).

Just simply click onto [www.rehauanswers.com](http://www.rehauanswers.com) to begin your calculation.

The following information provides a simple guide to the calculator and its functions and how to obtain proof of performance in just 3 easy steps.



## Step 1.

Select the calculation type required.

In nearly all situations the BRE standard window can be used. This is the only style that can be used to calculate WERs. This style satisfies all sizes and style of window according to BRE 443.

However, there might be cases where U values for specific style and sizes are required therefore other options are available if necessary.



For further information on energy efficiency windows from REHAU, please [CLICK HERE](#)

### U VALUE / WER CALCULATOR

#### WELCOME TO THE REHAU ONLINE THERMAL CALCULATOR

This calculator is an easy to use tool which will demonstrate the energy efficiency of REHAU systems. This program has been designed to calculate the thermal transmittance (U Value) of windows and doors following the principals of BS EN ISO 10077-1 using REHAU window profiles.

This calculator also provides a Window Energy Rating (WER) indication based on the conventions and methods outlined in the Approved Document L.

This program will allow the user to demonstrate compliance of installed windows and doors with Building Regulation Part L following the guidance rules as set out in L1B section 4.20.

For a full range of products for your home, please visit [www.rehauhome.co.uk](http://www.rehauhome.co.uk)

Use of the BRE 443 Standard Window will enable the user to calculate the U value and the indicative Window Energy Rating (WER) value based on the guidelines as described in the Building Regulations Part L.

The other options available will enable the user to calculate U values for specific sizes and styles of windows and doors.

If you have any requirements which are not covered within this calculator tool or you have any questions relating to its use please contact [enquiries@rehauanswers.com](mailto:enquiries@rehauanswers.com)

### SELECT YOUR CALCULATION TYPE



WER / U VALUE  
CALCULATIONS:  
BRE STANDARD  
WINDOW



U VALUE  
CALCULATIONS:  
WINDOWS



U VALUE  
CALCULATIONS:  
DOORS



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## USER GUIDE

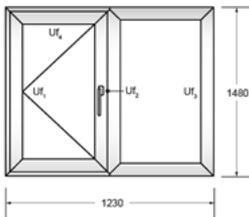
### Step 2.

Input the combination.

After selecting the calculation type (in this case the BRE standard window) the user can input the different combinations of profiles and glass that are used in the window. A number of pre-defined options are available from drop down boxes to make the process quick and simple. Once all fields are completed the user can either perform a U value calculation or a WER calculation.



### U VALUE / WER CALCULATOR : BRE STANDARD WINDOW : BRE STANDARD



#### U VALUES:

The following values are only required for 'Custom' reinforcement types.

Uf1	<input type="text" value="0"/>	Uf2	<input type="text" value="0"/>
Uf3	<input type="text" value="0"/>	Uf4	<input type="text" value="0"/>

**FRAME:**

Select Frame System...

Select Reinforcement...

Select Frame System

Select Frame System

Select Frame System

**GLAZING 1:**

Select Manufacturer...

Select Glazing Unit...

Select Spacer Bar...

**FRAME:**

Select Frame System...

Select Frame System...

Edge

**S706**

Tritec

Select Frame System

Select Frame System

Select Frame System

Reinforcement option is based on REHAU Reinforcement Guidelines, see page 8 for further details.

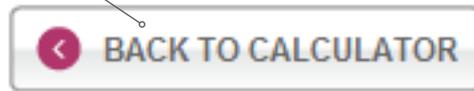
**CALCULATE:**

Depending on which calculation button is pressed the following page shows the results for the specific combination of profiles and glass that have been selected.

### Step 3.

Preview results page.

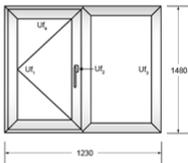
From these pages the user has two options. If the result is not what was expected or a different result is needed, the user can simply return to the calculator to make changes. Previous information is stored so there is no need to input all of the profile or glazing options again – it might only need a change of spacer bar to get the required result!



#### U VALUE CALCULATION : BRE STANDARD WINDOW

S706

U VALUE: 1.57 W/m<sup>2</sup>K



Read Disclaimer

Project Title/Company Name:

Project Ref:

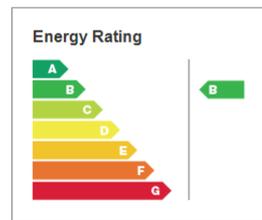
Frame Details	
Outer Frame	Slim (52mm) 546070/5
Mullion	Slim Z (69mm) 546090/5
Outer Frame	T Sash (75mm) 546100/6
Reinforcement Type	Full



#### WER CALCULATION : BRE STANDARD WINDOW

S706

U VALUE: 1.57 W/m<sup>2</sup>K

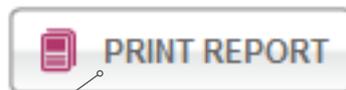


Read Disclaimer

Project Title/Company Name:

Project Ref:

Frame Details	
Outer Frame Art	546070/5
Sash Art	546100/6
Mullion Art	546090/5
Reinforcement Type	Standard
Glazing Manufacturer	Saint Gobain



If the required result is achieved then the report can be downloaded and stored or printed. Specific company and job project reference fields are available for the user to input to satisfy each individual installation.

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## USER GUIDE

### Results

Your certificates will be shown as below for you to save and print.

For further information on Energy Efficient windows and doors visit [www.rehau.co.uk](http://www.rehau.co.uk)  
 For information regarding the use of the REHAU Online Thermal calculator or for any questions or issues found when using the calculator please contact [enquiries@rehauanswers.com](mailto:enquiries@rehauanswers.com)

For a full range of products for your home, please visit [www.rehauhome.co.uk](http://www.rehauhome.co.uk)

### U VALUE CALCULATION



S706	07/06/2011	U VALUE	
Proj Title / Co. Name	REHAU Ltd	REHAU Ltd Test Project	
Project Ref	Test Project	07/06/2011	
System	S706	FRAME SUMMARY S706 Slim (52mm) T Sash (75mm)	
Frame Type	Slim (52mm)	GLASS SUMMARY Float/Air/Planitherm Total +	
Sash Type	T Sash (75mm)		OVERALL WINDOW SIZE WIDTH = 1230 HEIGHT = 1480
Reinforcement Type	Standard		THERMAL TRANSMITTANCE <b>U VALUE (W/m<sup>2</sup>K)</b> 1.59
Glazing Manufacturer	Saint Gobain		
Glazing Unit	Float/Air/Planitherm Total +	<small>This U Value Calculation has been carried out in accordance with BS EN 10077-1:2007, which is referenced by Building Regulations Part L 1b 2010 section 4.20.</small>	
Spacer Bar	Swiss Spacer V + Butyl	<small>This U Value Calculation has been carried out in accordance with BS EN 10077-1:2007, which is referenced by Building Regulations Part L 1b 2010 section 4.20.</small>	
Centre Pane U	1.46	<small>This U Value Calculation has been carried out in accordance with BS EN 10077-1:2007, which is referenced by Building Regulations Part L 1b 2010 section 4.20.</small>	
Air Leakage (Based On Testing To BS6375)	0.21	<small>This U Value Calculation has been carried out in accordance with BS EN 10077-1:2007, which is referenced by Building Regulations Part L 1b 2010 section 4.20.</small>	
Thermal Transmittance	1.59	<small>This U Value Calculation has been carried out in accordance with BS EN 10077-1:2007, which is referenced by Building Regulations Part L 1b 2010 section 4.20.</small>	

This U Value Calculation has been carried out in accordance with BS EN 10077-1:2007, and in accordance with Building Regulations Part L 1b 2010 Section 4.20.

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### WINDOW ENERGY RATING (WER)



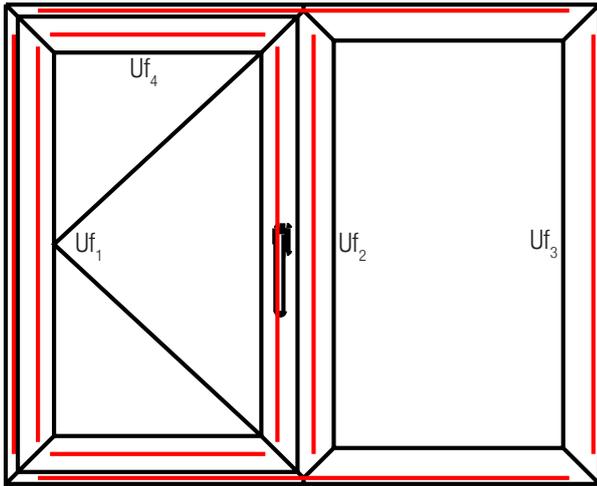
S706	07/06/2011	Window Energy Rating (WER)	
Company Name		REHAU Ltd Test Project	
Project Reference		07/06/2011	
System	S706	FRAME SUMMARY S706 Slim (52mm) T Sash (75mm)	
Frame Type	Slim (52mm)	GLASS SUMMARY Float/Air/Planitherm Total +	
Sash Type	T Sash (75mm)		OVERALL WINDOW SIZE WIDTH = 1230 HEIGHT = 1480
Reinforcement Type	Standard		ENERGY INDEX (kWh/m <sup>2</sup> ·yr) -10.7
Glazing Manufacturer	Saint Gobain		
Glazing Unit	Float/Air/Planitherm Total +	<small>This Window Energy Rating has been calculated in accordance with Building Regulations Part L1b 2010 section 4.22 and is based on a UK standard window (1230mm wide x 1480mm high) as set out in BR 443 – Conventions for U value calculations, BRE 2006.</small>	
Spacer Bar		<small>This Window Energy Rating has been calculated in accordance with Building Regulations Part L1b 2010 section 4.22 and is based on a UK standard window (1230mm wide x 1480mm high) as set out in BR 443 – Conventions for U value calculations, BRE 2006.</small>	
Thermal Transmittance	1.59	The climate zone is: UK	
Solar Factor	0.45	Window Thermal Transmittance (Uw) 1.59	
Air Leakage (Based On Testing To BS6375)	0.21	Window Solar Factor (g) 0.45	
		Air Leakage (L) 0.21	
Energy Index	-10.7		
Energy Rating	C	<small>This Window Energy Rating has been calculated in accordance with Building Regulations Part L1b 2010 section 4.22 and is based on a UK standard window (1230mm wide x 1480mm high) as set out in BR 443 – Conventions for U value calculations, BRE 2006.</small>	

This Window Energy Rating has been calculated in accordance with Building Regulations Part L1b 2010 section 4.22 and is based on a UK standard window (1230mm wide x 1480mm high) as set out in BR 443 – Conventions for U value calculations, BRE 2006.

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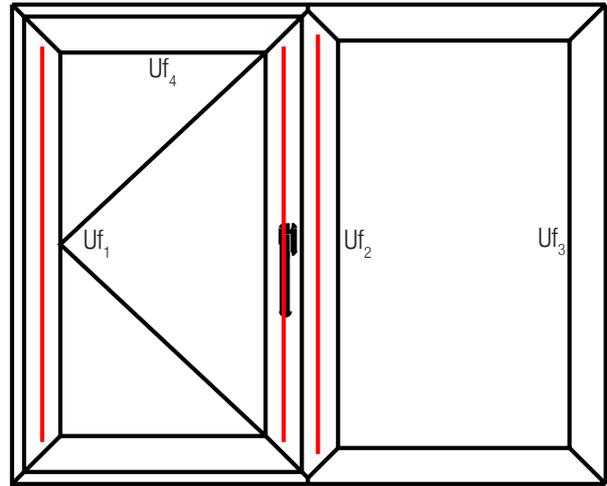
## Notes

See below reinforcement positions according to REHAU standard guidelines, steel shown in red.



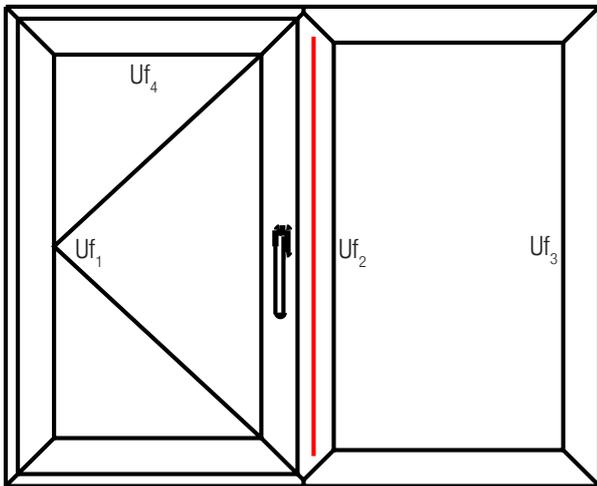
Full reinforcement

$U_{f_1} = 1.7$   $U_{f_2} = 1.7$   $U_{f_3} = 1.6$   $U_{f_4} = 1.7$



Partial reinforcement

$U_{f_1} = 1.6$   $U_{f_2} = 1.7$   $U_{f_3} = 1.4$   $U_{f_4} = 1.5$



Mullion only reinforcement

$U_{f_1} = 1.5$   $U_{f_2} = 1.6$   $U_{f_3} = 1.4$   $U_{f_4} = 1.5$

Individual frame U values for custom reinforcement can be inputted if necessary, REHAU Reinforcement Guidelines should always be followed.