

H1 Changes 2022

Part Three: Windows



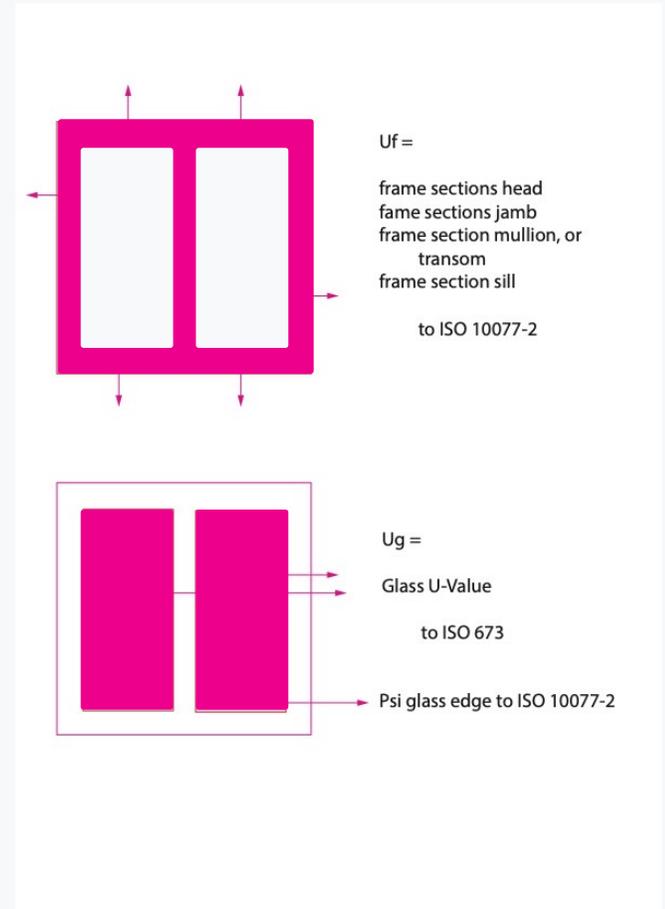
What has changed?

There has been some great progress for windows with R-Values coming into effect.

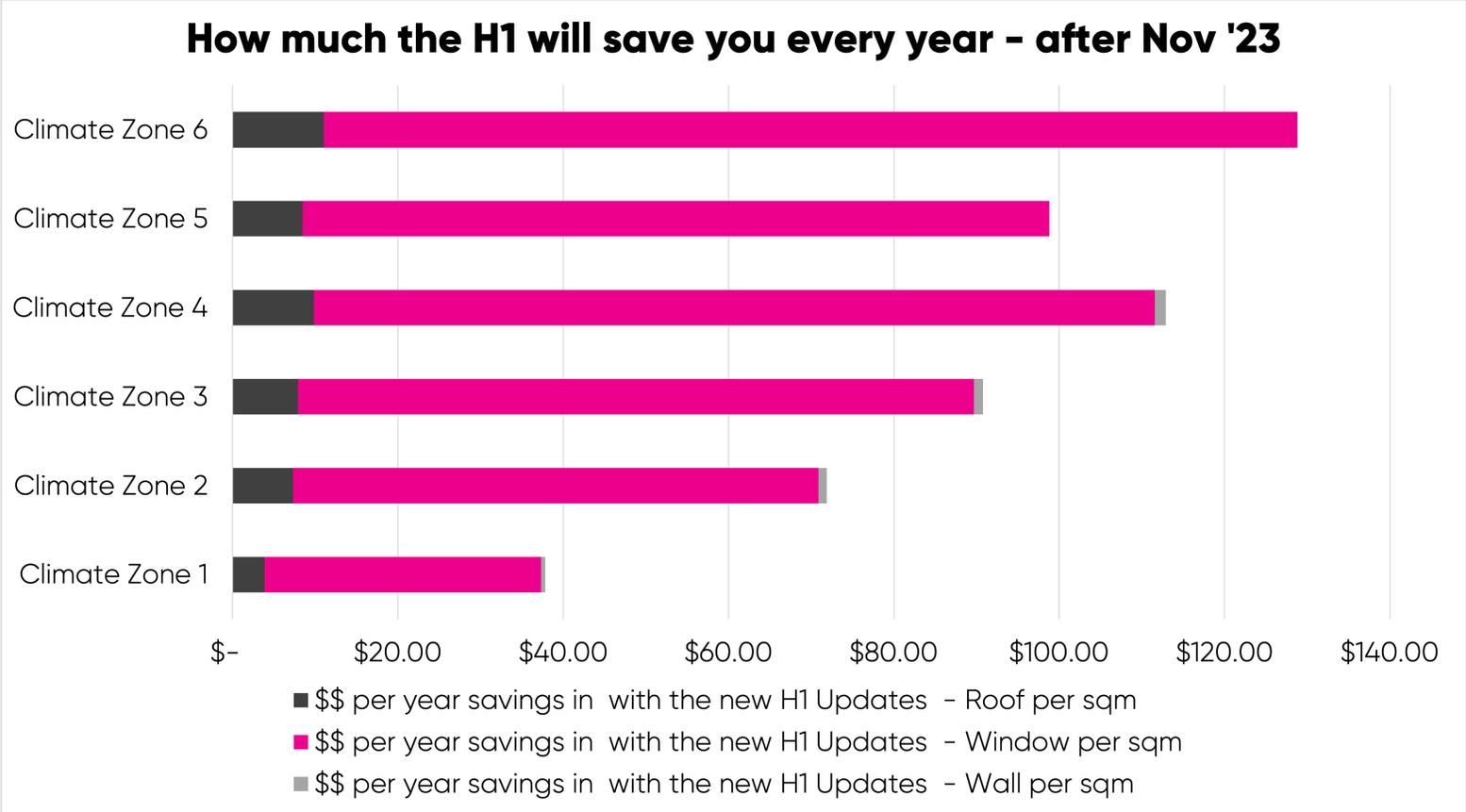
Windows are now calculated more accurately looking at the exact frame and glass properties so that we can enjoy better performing windows and comfortable indoor environments!

The new way to calculate the R-Value now is to separately consider the frame area, the glass area and the glass edge length. This is done for each individual window size and not just based on a standard window like before.

Smaller windows will therefore be more affected by the frame R-Value and larger windows more by the glass R-Value – and overall, the heat loss, for each window will be more accurate than before and will make H1 more accurate than before.



Saving money



This calculation allows for a better-quality products and saving a lot of money throughout the year!

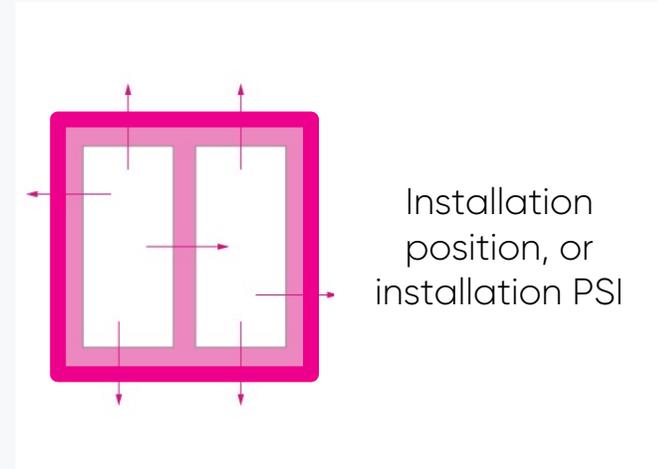


What's missing?

Installation position:

With the new calculation method, we have already done 80% of the great work needed to make windows a much better component in the building envelope but there's a not so small part that hasn't been addressed because of current shortcomings with E2/AS1 in clause E2, weathertightness – the installation position in the wall.

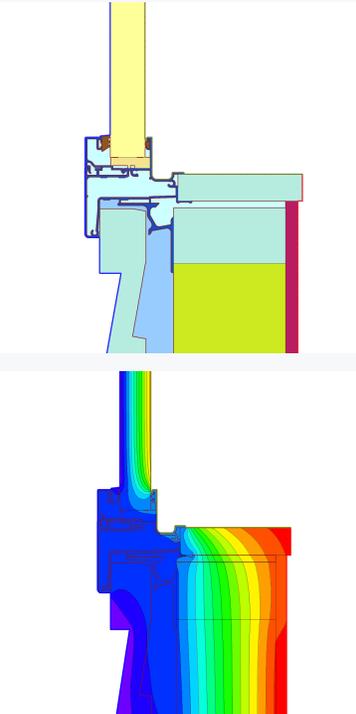
Similar to the glass spacer, the installation edge is heat loss is occurring at the perimeter of the window. For a sample window like the one on the right with a total width of 1000mm and height of 1000mm the installation length adds up to 4m! A bad installation could lower the window R-Value up to 25% and introduce condensation in this area. Not an ideal scenario when you just bought thermally broken frames. If exterior air can get past the thermal break to the interior aluminium, it's not going to work very well.



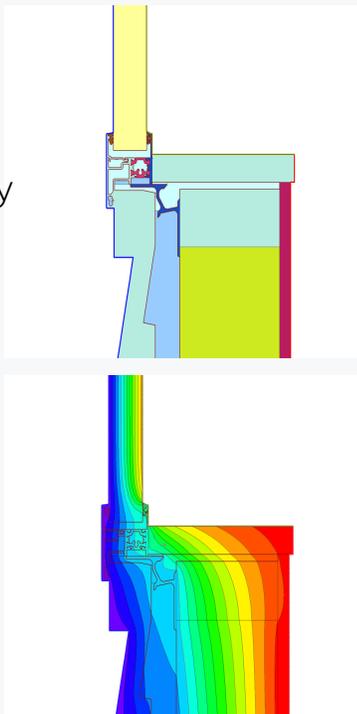
Condensation on windows could become a thing of the past

Why better R-Values lead to less condensation and why the installation of the window is so important – yet still missing from this update.

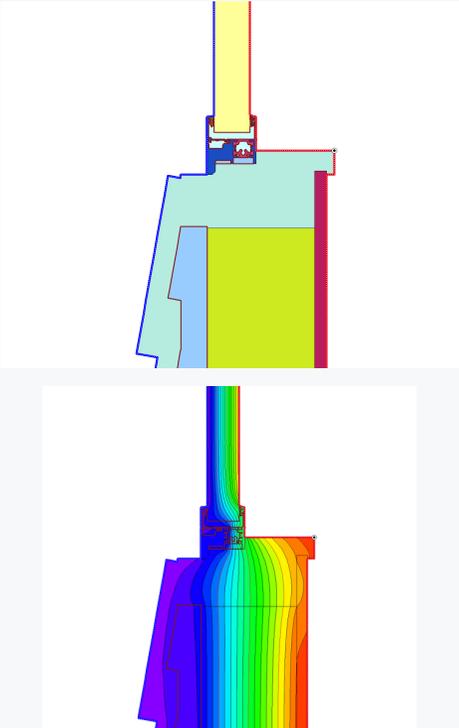
Non - thermally broken frame installed outside



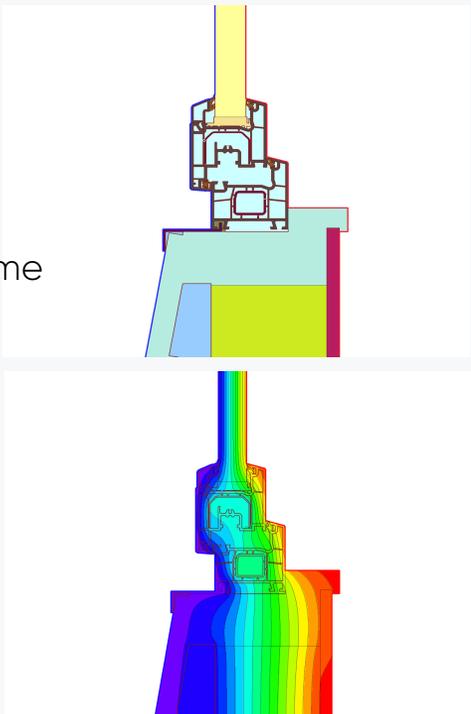
Thermally broken frame installed outside



Thermally broken frame installed tucked in



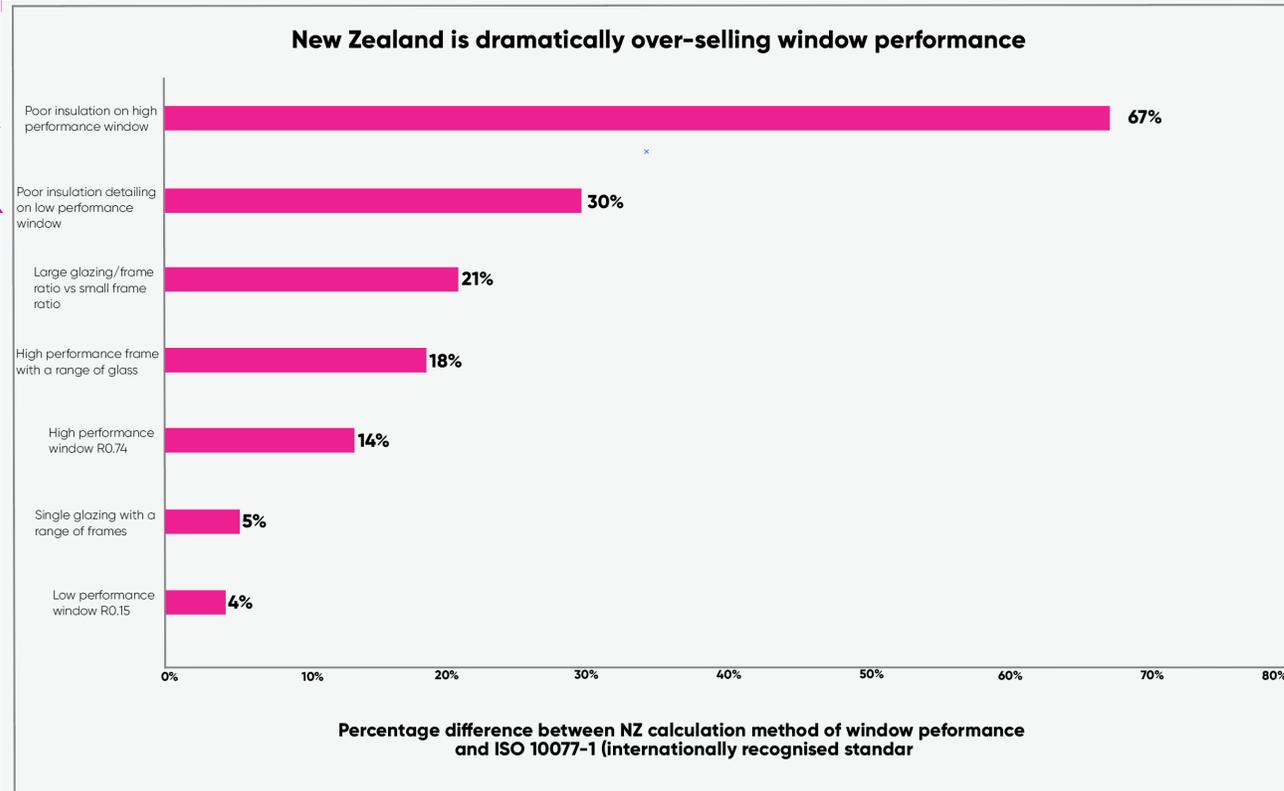
uPVC frame installed inside



How does the calculation method change the performance of the building?

Installation

The better performing windows are the more important the calculation method becomes. Poor calculation methods lead to unpredictable heat loss and unpredictable costs to heat and cool a building!



What information can now be supplied to clients?

What is the information you should be receiving as a client from a window company?

- A complete list of all joinery types, grouped into same sizes and makeups
- Components used, such as frame profiles (sliding, fixed, awning, tilt and turn),

Average Uf of the system

- Glass fields and which glass is being used, glass Ug
- Glass edge spacer type
- A summary of total window area
- As summary of average R-value

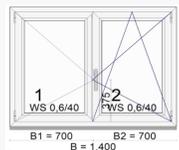
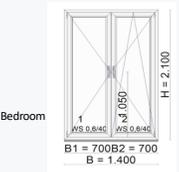
If you still need help - come to us!

Example Order/Supply sheet

Windows NZ Ltd

Window Ltd
Window Lane 1
Window city

Order Confirmation

Number	Specification	Cost
1	 <p>Profile; Example Profile Uf 1.5 W/(m2K) Frame, 80mm Sash, 80mm</p> <p>Field 1; IGU 4- 14Ar - 4 1,2Ug Edge spacer; Swisspacer Ultimate black</p> <p>Field 2; IGU 4- 14Ar - 4 1,2Ug Edge spacer; Swisspacer Ultimate black</p> <p>Colour/finishing interior Colour/finishing exterior Handles/Hardware</p> <p>Window area 1.498 m2</p> <p>Window R-Value to ISO 10077-2 0.46 (m²k)/W</p>	
2	 <p>Profile; Example Profile Uf 1.5 W/(m2K) Frame, 80mm Sash, 80mm</p> <p>Field 1; IGU 4- 14Ar - 4 1,2Ug Edge spacer; Swisspacer Ultimate black</p> <p>Field 2; IGU 4- 14Ar - 4 1,2Ug Edge spacer; Swisspacer Ultimate black</p> <p>Colour/finishing interior Colour/finishing exterior Handles/Hardware</p> <p>Window area 2.94 m2</p> <p>Window R-Value to ISO 10077-2 0.46 (m²k)/W</p>	
<p>Total Window Area 4.438 m2</p> <p>Total Window R-Value 0.46 (m²k)/W</p>		



Tips and tricks to make these changes more economical

Increasing the R-value of a window might seem like it will make the build more expensive, but that's only if you're putting a more expensive window into the exact same detail. Have you thought of:

- Standardising window dimensions
- Deleting timber liners and finishing with gypsum board
- Taped air seals instead of wet seals
- Deleting the WANZ bar and pulling the window inward
- Deleting nogs and other unnecessary framing in your timber walls
- Importing your windows
- Putting "Rough opening" sizes on drawings and clauses in contracts to minimize site measuring and mistakes
- Using more efficient exterior finishing details

