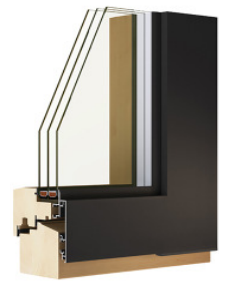
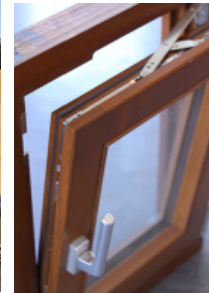




Extremely high energy efficiency and very low air infiltration, European style, made in Australia. Choose from Wood-Alu and Architectural Timber windows and doors with triple glazing, soft coat low-E glass and extra seals



Range inclusions

- Custom made to size and shape
- Frame thickness IV 78mm
- Triple glazed Low-E glass with 2x 14mm-16mm argon-filled airgap
- German hardware fittings, extra seals
- Spray painted with low VOC paints or lasur
- Timely delivery – link to installation videos supplied
- Industry warranties apply and 10 years warranty on glass
- Noise reduction up to 43dB
- U-values from a very low 0.8

Available in the range:

Windows: European style tilt & turn, fixed picture, clerestory/tilt, sliding, heritage, shapes

Doors: lift-slide sliding, giant lift-slide, stacker sliders, corner lift-slide, bi-fold, French, single hinged glass doors

Different U-value Certification Calculations

Windows around the world get tested and certified using different criteria. The Australian Fenestration Rating Council (AFRC) uses the North American National Fenestration Rating Council (NFRC) system. Europe uses ISO 10077-2 and ISO 15099, and in addition there is the Passive House Criteria and ift Rosenheim Directive WA15/2.

The important differences between the systems are:

- Boundary conditions
- Calculating solar heat gain (Solar Heat Gain Coefficient (SHGC))
- Methods of accounting for solar glass effects
- Reference sizes
- Installation values

According to the board of the AFRC, the base for a window assessment in Australia is as per ISO-15099. Climate protocol considering local conditions, which are different to the USA, Canada and Europe, must be included. In addition, a much smaller specimen type to that used in Europe is used in Australia as the base of the evaluation.

This gives a different U-value and SHGC to other countries. W/m²-K might be kW, but if other parameters are used the outcome will differ. NATHERS asks for 27 parameters (factors) for input to produce a window rating (this is before the window has been installed).

You can be certain that Australian made Paarhammer products will perform exactly like European imported windows and doors and will reach all Passive House requirements. In addition you will enjoy local backup, service and warranties.

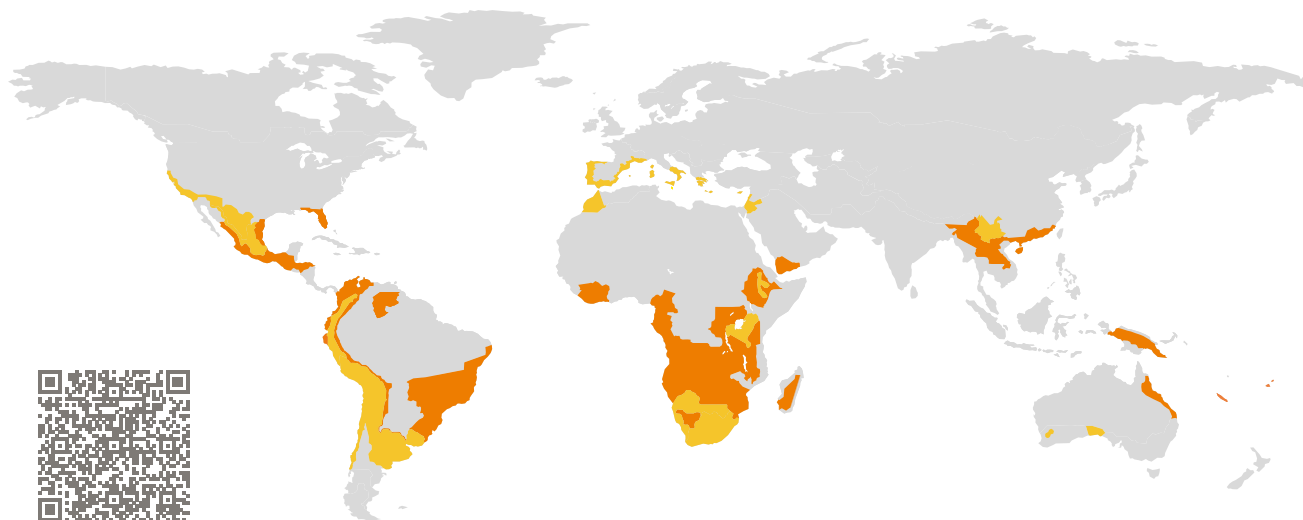


CERTIFICATE

Certified Passive House Component

Component-ID 2136wi05 valid until 31st December 2024

Passive House Institute
Dr. Wolfgang Feist
64283 Darmstadt
Germany

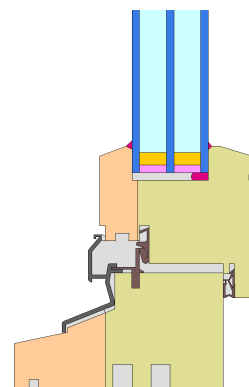


Category: **Window Frame**
Manufacturer: **Paarhammer Pty / Ltd,
Ballan,
Australia**
Product name: **Passive House IV82 Range**

This certificate was awarded based on the following criteria for the warm climate zone

Comfort $U_W = 1.20 \leq 1.20 \text{ W}/(\text{m}^2 \cdot \text{K})$
 $U_{W,\text{installed}} \leq 1.25 \text{ W}/(\text{m}^2 \cdot \text{K})$
with $U_g = 1.10 \text{ W}/(\text{m}^2 \cdot \text{K})$

Hygiene $f_{Rsi=0.25} \geq 0.55$



Passive House
efficiency class

phE

phD

phC

phB

phA

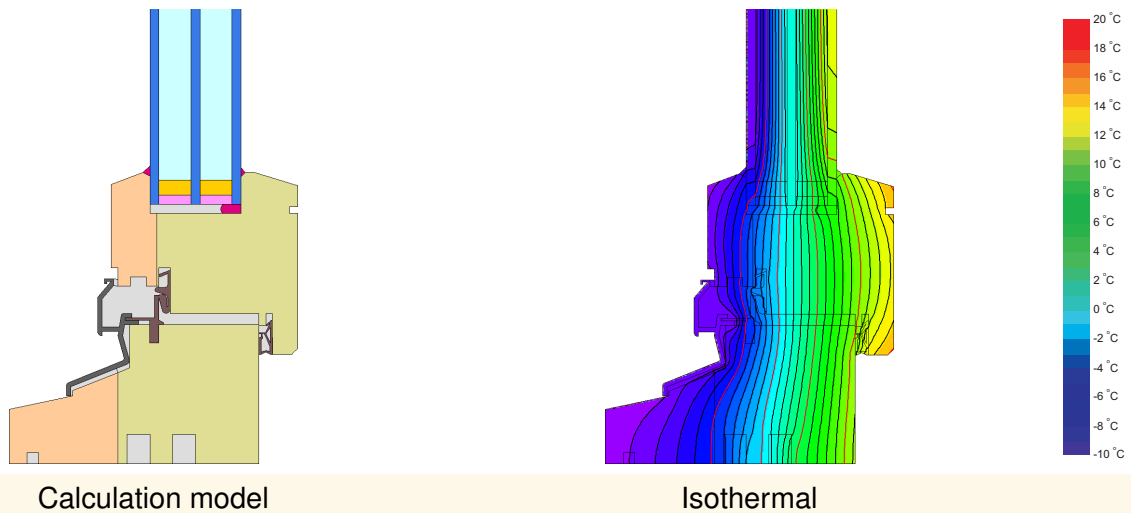
www.passivehouse.com

warm climate



**CERTIFIED
COMPONENT**

Passive House Institute



Description

Wooden frame (0.13 W/(mK)) with aluminum weather shell on sill, Accoya outer layer. Pane thickness: 40 mm (4/14/4/14/4), rebate depth: 13 mm.

Explanation

The window U-values were calculated for the test window size of 1.23 m × 1.48 m with $U_g = 1.10 \text{ W}/(\text{m}^2 \cdot \text{K})$. If a higher quality glazing is used, the window U-values will improve as follows:

Glazing	$U_g =$	1.10	0.90	0.70	0.64	W/(m ² · K)
		↓	↓	↓	↓	
Window	$U_W =$	1.20	1.07	0.93	0.89	W/(m ² · K)

Transparent building components are classified into efficiency classes depending on the heat losses through the opaque part. The frame U-Values, frame widths, thermal bridges at the glazing edge, and the glazing edge lengths are included in these heat losses. A more detailed report of the calculations performed in the context of certification is available from the manufacturer.

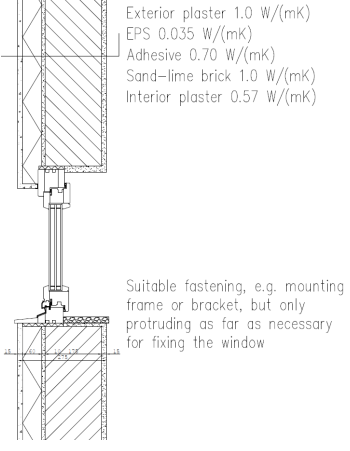
The Passive House Institute has defined international component criteria for seven climate zones. In principle, components which have been certified for climate zones with higher requirements may also be used in climates with less stringent requirements. In a particular climate zone it may make sense to use a component of a higher thermal quality which has been certified for a climate zone with more stringent requirements.

Further information relating to certification can be found on www.passivehouse.com and passipedia.org.

Validated installations

Exterior insulation and finishing system (EIFS) (operable)

$U_{Wall} = 0.47 \text{ W}/(\text{m}^2 \cdot \text{K})$







Exterior plaster 1.0 W/(mK)
 EPS 0.035 W/(mK)
 Adhesive 0.70 W/(mK)
 Sand-lime brick 1.0 W/(mK)
 Interior plaster 0.57 W/(mK)

Suitable fastening, e.g. mounting frame or bracket, but only protruding as far as necessary for fixing the window

$\Psi_{install}$	W/(m · K)
Top	0.012
Side	0.012
Bottom	0.041

$U_{W,installed} = 1.25 \text{ W}/(\text{m}^2 \cdot \text{K})$

Frame values		Frame width b_f mm	U -value frame U_f W/(m ² · K)	Ψ -glazing edge Ψ_g W/(m · K)	Temp. Factor $f_{Rsi=0.25}$ [-]
Flying Mullion (FM1)		133	1.20	0.027	0.66
Bottom (OB1)		128	1.29	0.026	0.65
Top (OH1)		123	1.17	0.027	0.66
Lateral (OJ1)		123	1.17	0.027	0.66
Spacer: TGI-Spacer Precision			Secondary seal: Polysulfide		

