

# Certificate

valid up to 12/31/2007

Component  
suitable for

Passive Houses: **Window Frame**

Development: Zwönitzer Bauelemente GmbH, D-08297 Zwönitz  
Marketing/Sales:

Name of product: **HOLZ<sub>plus</sub> PASSIV 100**

Passive  
House  
Institute

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The following criteria were checked to award the certificate:

## Passive House-Comfort-Criterion:

Under standard conditions (use of glazing with  $U_g = 0,7 \text{ W}/(\text{m}^2\text{K})$ , width of window 1,23 m, height of window 1,48 m) the U-value of the window fulfills the following condition:

$$U_W = 0,80 \leq 0,80 \text{ W}/(\text{m}^2\text{K})$$

## Thermal data of the window-frame:

Frame	reveal	parapet
$U_f$ [W/(m <sup>2</sup> K)]	<b>0,80</b>	<b>0,85</b>
<b>width</b> [mm]	<b>141</b>	<b>141</b>

spacer at glazing rebate	Thermix
$\Psi_g$ [W/(mK)]	<b>0,026</b>

## Conditions specific for Passive Houses:

The suitability for Passive Houses was checked only with the spacer denoted above; thermally worse spacers, especially those made out of aluminium, lead to significantly higher thermal losses. In addition it has to be checked, that thermal insulating fillings are made of material with  $\lambda$ -value lower than 0,030 W/(mK).

## Positioning of Window suitable for Passive Houses:

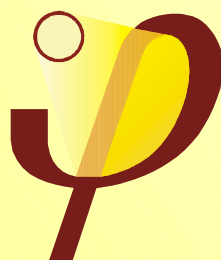
Including all thermal bridge effects, the window fulfills the condition

$$U_{W,positioned} \leq 0,85 \text{ W}/(\text{m}^2\text{K}),$$

if the window is installed into wall constructions suitable for passive houses (brick wall with thermal insulation, light weight wooden construction and form work for concrete made of polysterene) according to the drawings of details given in the appendix.

## **The Certificate has to be used as follows:**

**COMPONENT**  
**suitable for**  
**PASSIVE**  
**HOUSES**  
**Dr. Wolfgang Feist**



**window-frame:**  
 $U_f = 0,80/0,85 \text{ W}/(\text{m}^2\text{K})$   
 $\Psi_g = 0,026 \text{ W}/(\text{mK})$   
**width = 141/141 mm**