

# Certificate

## Passive House suitable component

for cool, temperate climate, valid until 31.12.2012

Passive House Institute  
Dr. Wolfgang Feist  
64283 Darmstadt  
GERMANY

Category: **Window Frame**  
 Manufacturer: **SLAVONA, s.r.o.**  
**378 81 Slavonice, CZECH REP.**  
 Product name: **Progression**

The following comfort criteria were used in awarding this certificate:

Given a  $U_g$  value of  $0.70 \text{ W}/(\text{m}^2\text{K})$  and a window size of 1.23 m by 1.48 m,

$$U_w = 0.80 \text{ W}/(\text{m}^2\text{K}) \leq 0.80 \text{ W}/(\text{m}^2\text{K})$$

Taking into account the installation based thermal bridges, and provided that the installation is, with regard to the thermal bridges, equal or better than shown in the data sheet, the window meets the following criterion.

$$U_{w,\text{installed}} \leq 0.85 \text{ W}/(\text{m}^2\text{K})$$

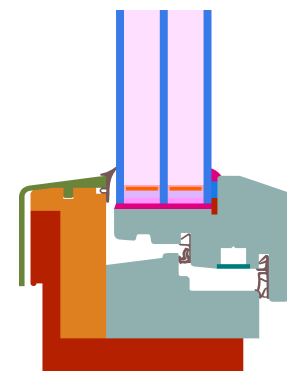
### Thermal data

|          | $U_f$ -value<br>[W/(m <sup>2</sup> K)] | Width<br>[mm] | $\Psi_g$<br>[W/(mK)] | $f_{Rsi=0.25}$<br>[-] |
|----------|--|---------------|----------------------|-----------------------|
| Spacer   | SwisspacerV*                           |               |                      | 0.72                  |
| Bottom   | 0.81                                   | 109           | 0.026                |                       |
| Side/top | 0.83                                   | 89            | 0.025                |                       |

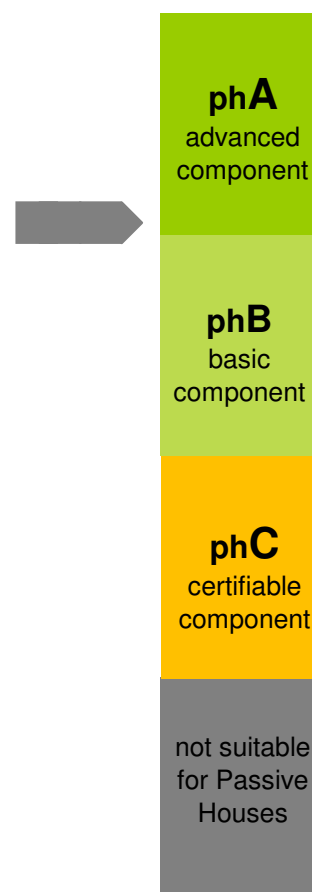
\*Spacers of lower thermal quality, especially those made of aluminium, lead to significantly higher thermal losses and lower temperature factors.


Further information see data sheet

[www.passivehouse.com](http://www.passivehouse.com)



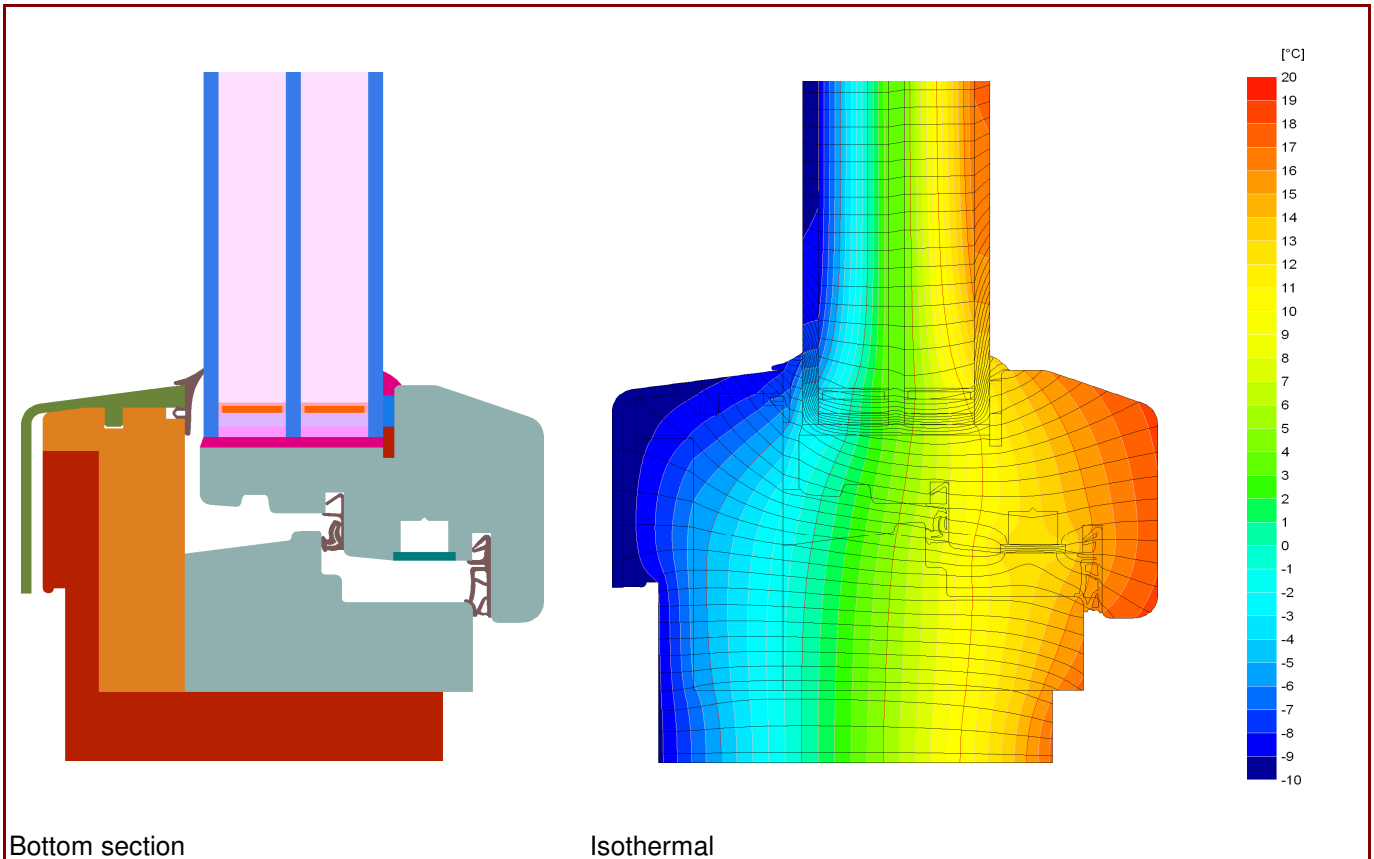
### Passive House Efficiency Class



 **Passive House suitable component**  
Dr. Wolfgang Feist

# Data Sheet SLAVONA, s.r.o., Progression

**Manufacturer** SLAVONA, s.r.o.  
 Stálkovská 258, 378 81 Slavonice, CZECH REPUBLIC  
 Tel.: +420 384 493 400, +420 604 271 549  
 Email: zora@slavona.cz, libor.kamir@slavona.cz, www.slavona.cz

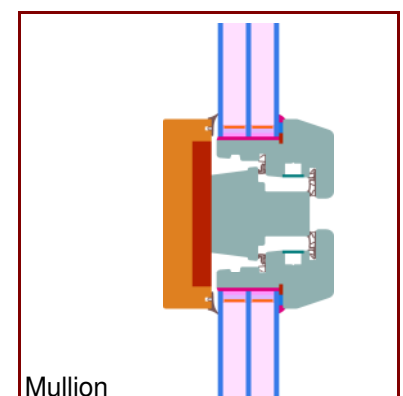


## Description

Timber frame (Spruce and Thermowood) with insulation ( $\lambda = 0,058\text{W/mK}$ ). Used Pane: 48 mm (4/18/4/18/4), intersection of the Glass: 18 mm.

## Thermal data for the window frame

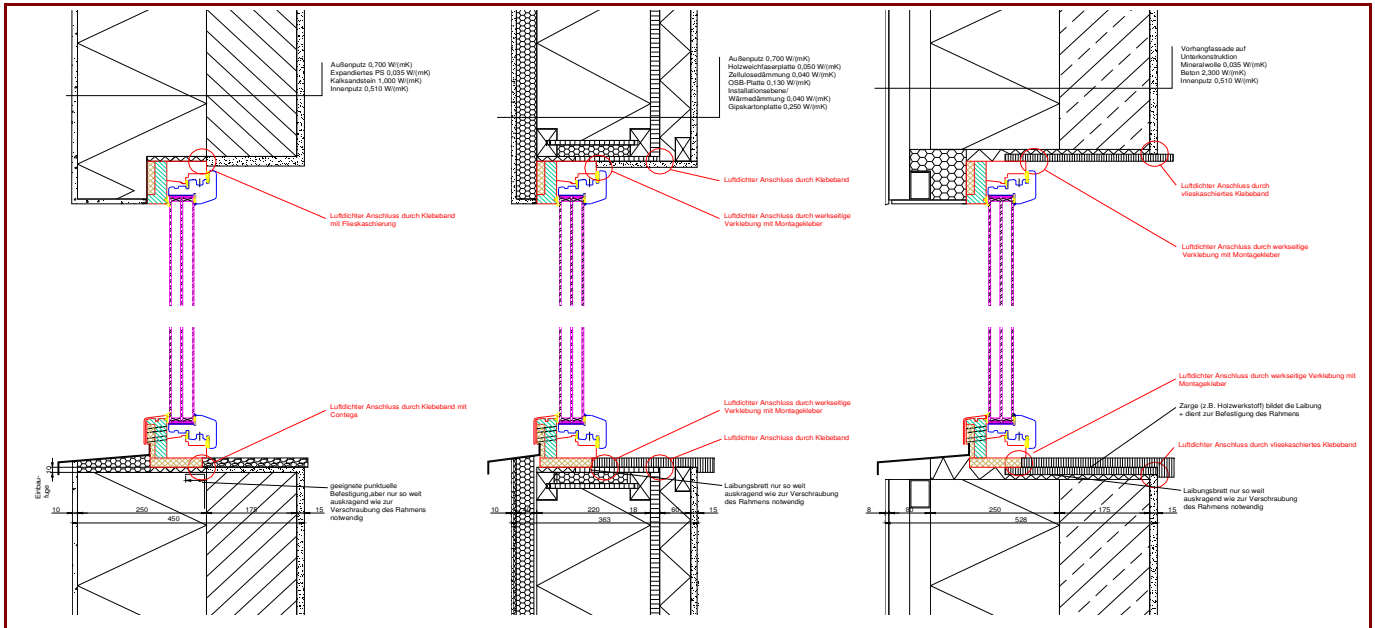
|          | $U_f$ -value<br>[W/(m <sup>2</sup> K)] | Width<br>[mm] | $\Psi_g$<br>[W/(mK)] | $f_{Rsi=0.25}$<br>[-] |
|----------|--|---------------|----------------------|-----------------------|
| Spacer   | SwisspacerV*                           |               |                      |                       |
| Bottom   | 0.81                                   | 109           | 0.026                | 0.72                  |
| Side/top | 0.83                                   | 89            | 0.025                |                       |
| Mullion  | 0.82                                   | 164           | 0.026                | 0.72                  |



\* Spacers of lower thermal quality leading to higher thermal losses and lower temperatures.

# Data Sheet SLAVONA, s.r.o., Progression

## Installation



## Installation based thermal bridge $\Psi_{instal}$ in Passive House suitable walls

|                                  |                        | EIFS   | Timber construction wall | Ventilated facing |
|----------------------------------|------------------------|--------|--------------------------|-------------------|
| <b>Position</b>                  |                        |        |                          |                   |
| <b>Bottom</b>                    | [W/(mK)]               | 0.010  | 0.020                    | 0.008             |
| <b>Side/top</b>                  | [W/(mK)]               | -0.005 | 0.014                    | 0.000             |
| <b><math>U_{W,instal}</math></b> | [W/(m <sup>2</sup> K)] | 0.79   | 0.84                     | 0.80              |

### Explanatory notes

The window U-values were calculated based on a 1.23 m by 1.48 m window  $U_g = 0.70 \text{ W}/(\text{m}^2\text{K})$ . If better glazing is used, the window U-value decrease as follow:

|                  |  |      |      |      |
|------------------|--|------|------|------|
| <b>U Glazing</b> | <b><math>U_g</math> [W/(m<sup>2</sup>K)]</b> | 0.66 | 0.60 | 0.54 |
| <b>U Window</b>  | <b><math>U_w</math> [W/(m<sup>2</sup>K)]</b> | 0.77 | 0.72 | 0.68 |

Depending on the thermal losses through opaque elements, transparent components are categorised according to efficiency classes. These thermal losses include the losses through the frame, multiplied by its width, the thermal bridge at the edge bond as well as the length of the edge bond.

Please ask the manufacturer for a detailed report containing all calculations and results. For further information, please visit [www.passivehouse.com](http://www.passivehouse.com) or [www.passipedia.org](http://www.passipedia.org).