

# Certificate

## Certified Passive House Component

for cool, temperate climate, valid until 31.12.2016

Passive House Institute  
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Category: **Curtain Wall**  
 Manufacturer: **Alcoa Architectuursystemen**  
**3846 BX Harderwijk, NETHERLANDS**  
 Product name: **AA 100 HI+**

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 an element size of  $1.23 \text{ m}$  by  $2.50 \text{ m}$ ,

$$U_{CW} \quad 0.79 \text{ W}/(\text{m}^2\text{K}) \leq 0.80 \text{ W}/(\text{m}^2\text{K})$$

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 facade meets the following criterion.

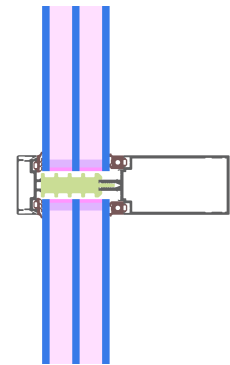
$$U_{CW, \text{installed}} \leq 0.85 \text{ W}/(\text{m}^2\text{K})$$

### Thermal data of the construction

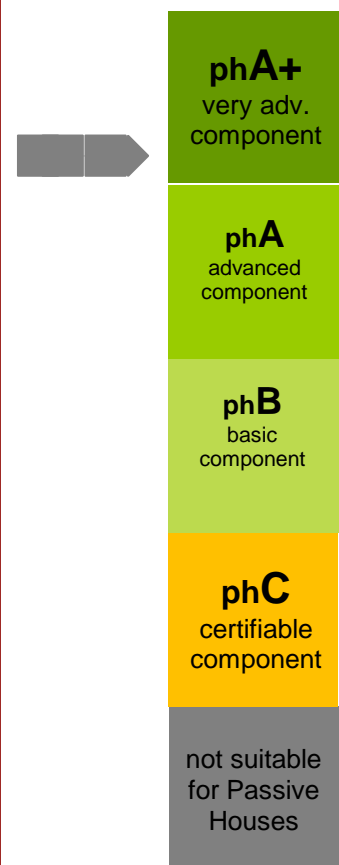
|   | $U_f$ -value<br>[W/(m <sup>2</sup> K)] | Width<br>[mm] | $\Psi_g$<br>[W/(mK)] | $f_{Rsi=0.25}$<br>[-] |
|---|--|---------------|----------------------|-----------------------|
| Spacer  | Swissspacer V*                         |               |                      |                       |
| Transom (t)                                     | 0.82                                   | 50            | 0.032                | 0.81                  |
| Mullion (m)                                     | 0.82                                   | 50            | 0.032                |                       |
| Thermal glass carrier bridge $\chi_{GT}$ [W/K]: |  |               |                      | 0.003                 |

\*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



### Passive House Efficiency Class



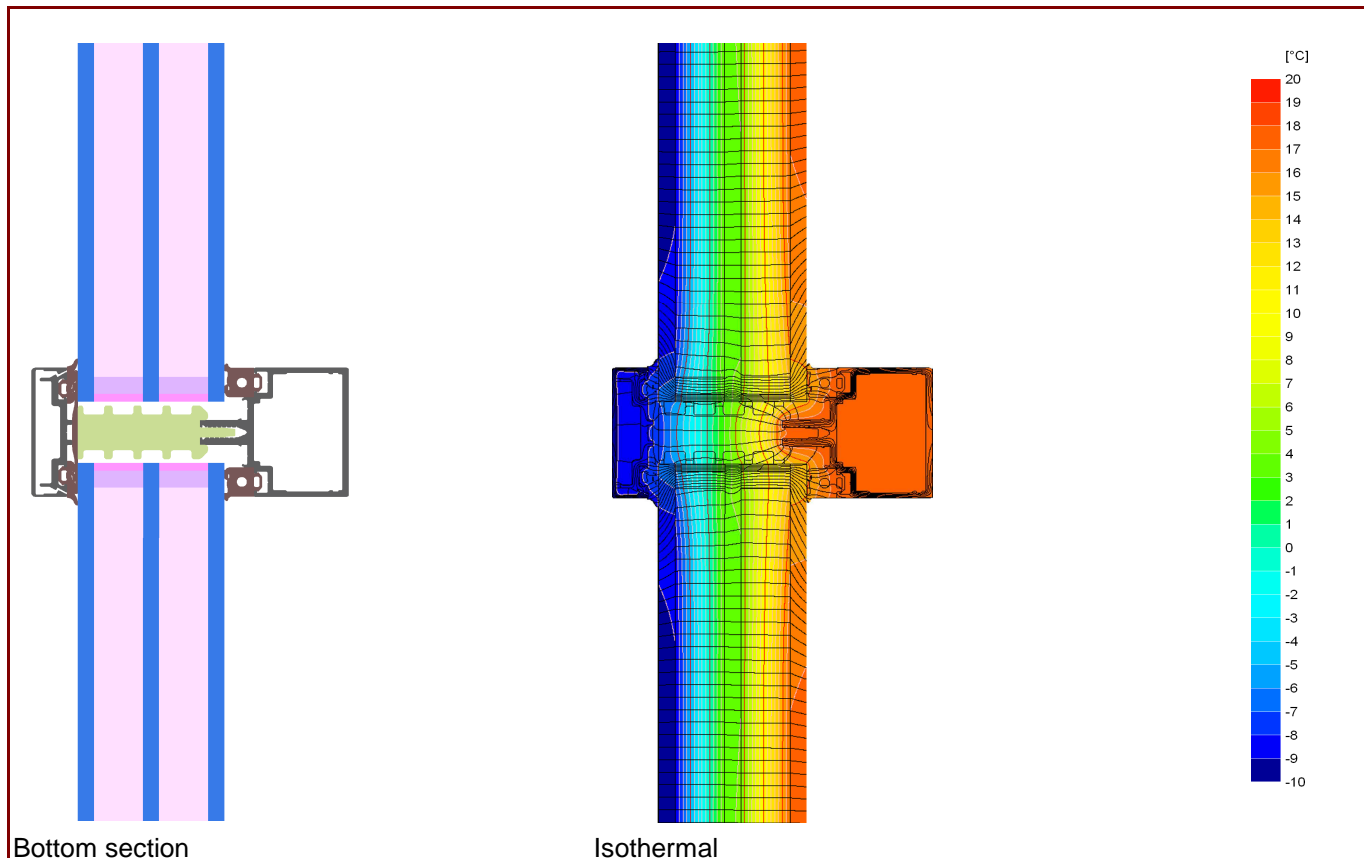
**CERTIFIED COMPONENT**

Passive House Institute

# Data Sheet Alcoa Architectuursystemen, AA 100 HI+

**Manufacturer** Alcoa Architectuursystemen  
3846 BX Harderwijk, NETHERLANDS

<http://www.alcoa.com>



## Description

Aluminium mullion and transom facade, cover- and pressure- strip of aluminium. PE-insulator ( $\lambda = 0.038 \text{ W}/(\text{mK})$ ) inside of the rebate. Used Pane: 54 mm (6/18/6/18/6), intersection of the Glass: 14 mm. Used spacer: Swisspacer V

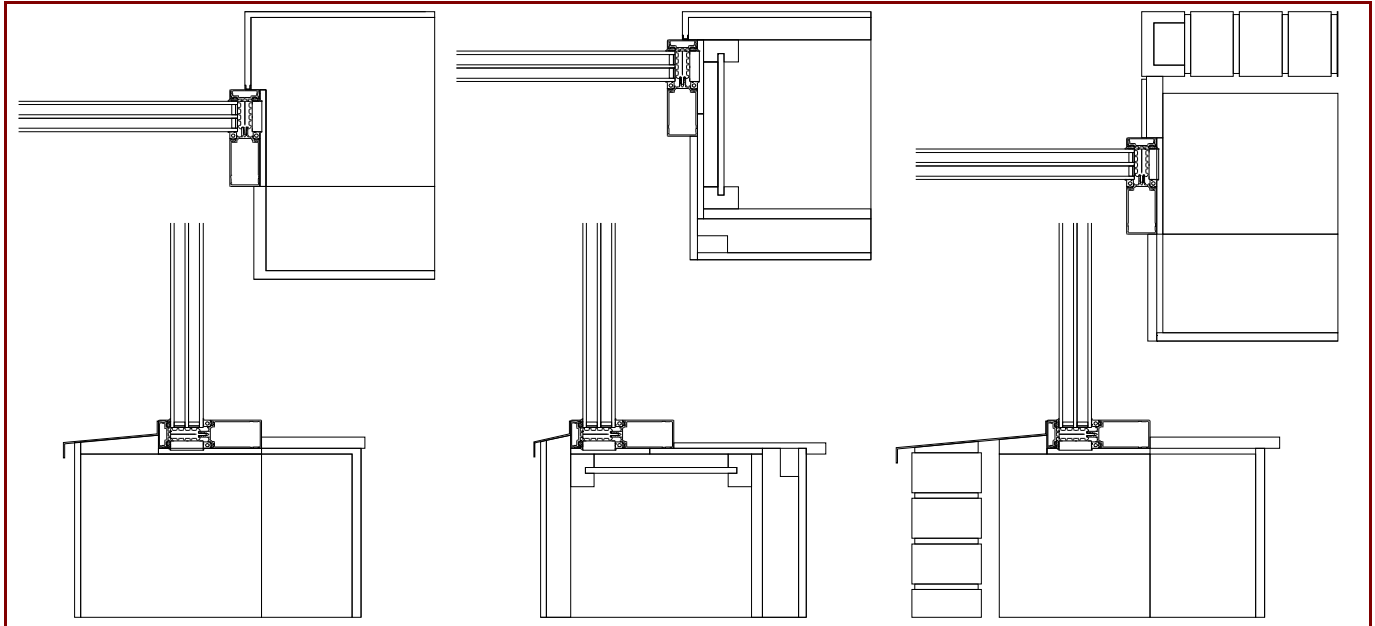
## Thermal data

|   | $U_f$ -value <sup>1</sup><br>[W/(m <sup>2</sup> K)] | Width<br>[mm] | $\Psi_g$<br>[W/(mK)] | $f_{Rsi=0.25}$<br>[-] |
|---|---|---------------|----------------------|-----------------------|
| Spacer  | Swisspacer V*                                       |               |                      |                       |
| Transom (t)   | 0.82  | 50            | 0.032                | 0.81                  |
| Mullion (m)   | 0.82  | 50            | 0.032                |                       |
| Opening element   |   |               |                      |                       |
| -   |   |               |                      |                       |
| Thermal glass carrier bridge $\chi_{GT}$ [W/K]:                               |   |               |                      | 0.0025                |
| 1: Includes $\Delta U = 0.15 \text{ W}/(\text{m}^2\text{K})$ , measured value |   |               |                      |                       |
| 2: Simulated by PHI   |   |               |                      |                       |

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

# Data Sheet Alcoa Architectuursystemen, AA 100 HI+

## Installation



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

|  |                        | EIFS  | Timber construction wall | Cavity Wall |
|--|------------------------|-------|--------------------------|-------------|
| <b>Position</b>                            |                        |       |                          |             |
| <b>Bottom</b>                              | [W/(mK)]               | 0.040 | 0.050                    | 0.040       |
| <b>Side/top</b>                            | [W/(mK)]               | 0.037 | 0.050                    | 0.037       |
| <b><math>U_{\text{CW,instaled}}</math></b> | [W/(m <sup>2</sup> K)] | 0.83  | 0.85                     | 0.83        |

## Explanatory notes

The facade-U-values were calculated based on a 1.20 m by 2.50 m element  $U_g = 0.70 \text{ W}/(\text{m}^2\text{K})$ .  
If better glazing is used, the facade-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 | 0.57 |
| <b>U Facade</b>  | <b><math>U_{\text{CW}}</math> [W/(m<sup>2</sup>K)]</b> | 0.75 | 0.69 | 0.66 |

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).