# CERTIFICATE

## Certified Passive House Component

Component-ID 1837cw03 valid until 31st December 2025

Passive House Institute
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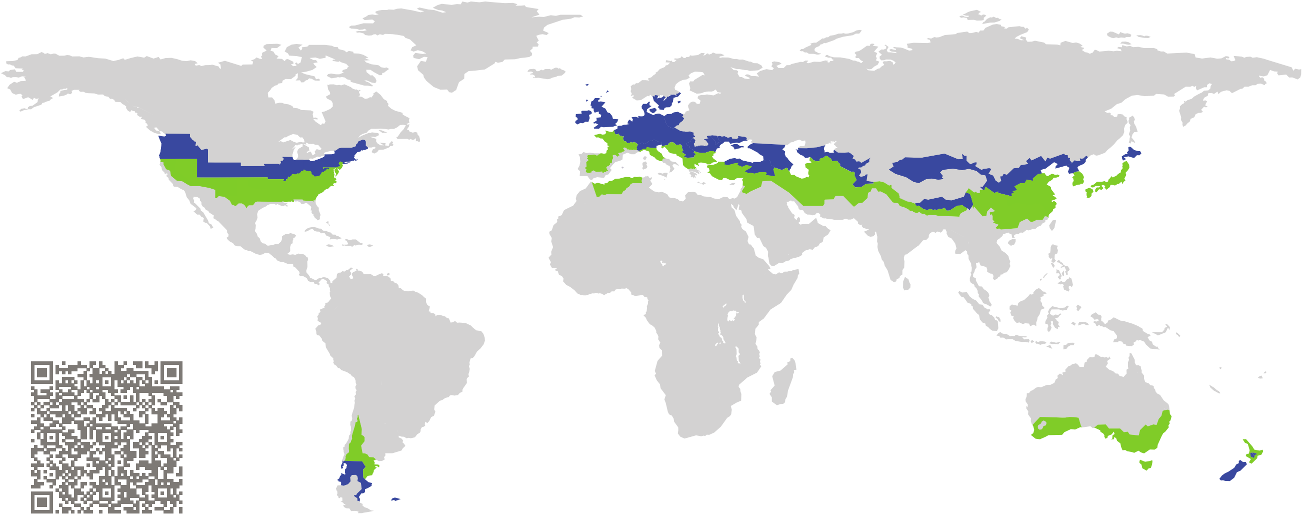
64283 Darmstadt
Germany

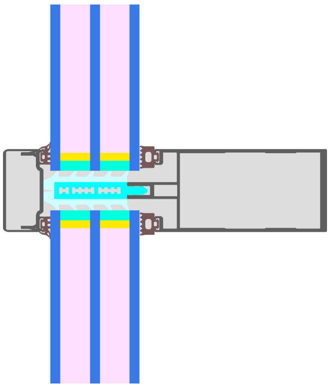


Category: **Curtain Wall**

Manufacturer: **REYNAERS ALUMINIUM NV/SA,**
**Duffel,**
**Belgium**

Product name: **ConceptWall 50 High Insulation**

**This certificate was awarded based on the following criteria for the cool, temperate climate zone**



Comfort $U_{CW} = 0.80 \leq 0.80\,\mathrm{W/(m^2\,K)}$

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

with $U_g = 0.70\,\mathrm{W/(m^2\,K)}$

Hygiene $f_{Rsi=0.25} \geq 0.70$

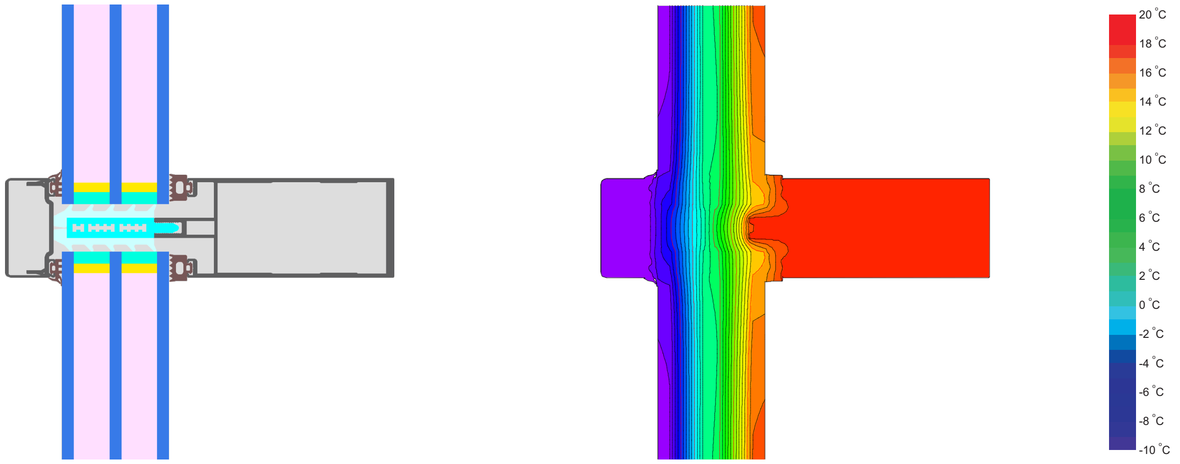
cool, temperate climate

phA+

CERTIFIED COMPONENT

Passive House Institute

**Passive House efficiency class** phE phD phC phB phA phA+



Calculation model | Isothermal

## Description

Aluminium stick curtain wall 50 mm wide, insulation by PE/PET-foam (0.038/0.035 W/mK). Glass thickness 54 mm (6/18/6/18/6) with 13 mm insertion and Edgetech Super Spacer Premium with 6 mm butyl secondary seal. Non-metallic glass carrier with screws - standard supplementary ChiGT-value of 0,004 W/K applied. Stainless steel pressure plate screws at 300 mm centres - standard supplementary Delta-U-value of 0,30 W/(m²K) applied.

## Explanation

The element U-values were calculated for the test element size of 1.20 m × 2.50 m with $U_g$ = 0.70 W/($m^2$ K). If a higher quality glazing is used, the element U-values will improve as follows:

| | | | | | | |
|---|---|---|---|---|---|---|
| Glazing | $U_g$ = | 0.70 | 0.63 | 0.58 | 0.52 | W/($m^2$ K) |
| | | ↓ | ↓ | ↓ | ↓ | |
| Element | $U_{CW}$ | 0.80 | 0.73 | 0.68 | 0.63 | W/($m^2$ K) |

Transparent building components are sorted 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 that have been certified for climate zones with higher thermal 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.

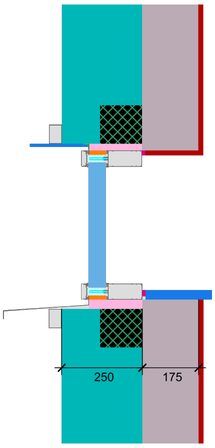
| Frame values | | Frame width<br>$b_f$<br>mm | $U$-value frame<br>$U_f$ [1]<br>W/(m$^2$ K) | $\Psi$-glazing edge<br>$\Psi_g$<br>W/(m K) | Temp. Factor<br>$f_{Rsi=0.25}$<br>[-] |
|---|---|---|---|---|---|
| Mullion<br>fixed | (0M1) | 50 | 0.95 | 0.033 | 0.82 |
| Transom<br>fixed | (0T1) | 50 | 0.95 | 0.034 | 0.84 |
| Bottom<br>fixed | (FB1) | 50 | 0.94 | 0.034 | 0.84 |
| Top<br>fixed | (FH1) | 50 | 0.94 | 0.034 | 0.84 |
| Lateral<br>fixed | (FJ1) | 50 | 0.94 | 0.032 | 0.81 |
| Spacer: Super Spacer® Premium | | | Secondary seal: Butyl | | |

Thermal glass carrier bridge[2] $\chi_{GT}$ = 0.004 W/K

## Validated installations

**Ventillated facade (fixed glazed)**

$U_{Wall}$ = 0.13 W/(m$^2$ K)

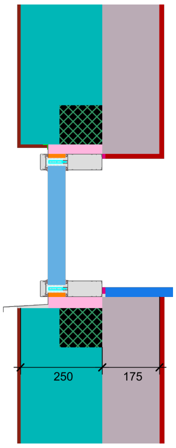


| $\Psi_{install}$ | W/(m K) |
|---|---|
| Top | 0.023 |
| Left | 0.020 |
| Right | 0.020 |
| Bottom | 0.024 |

$U_{W,installed}$ = 0.83 W/(m$^2$ K)

**Exterior insulation and finishing system (EIFS) (fixed glazed)**

$U_{Wall}$ = 0.13 W/(m$^2$ K)

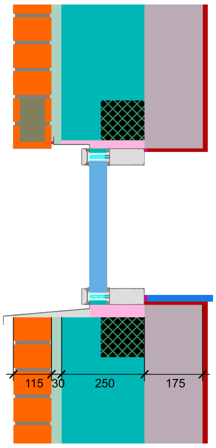


| $\Psi_{install}$ | W/(m K) |
|---|---|
| Top | 0.025 |
| Left | 0.020 |
| Right | 0.020 |
| Bottom | 0.025 |

$U_{W,installed}$ = 0.83 W/(m$^2$ K)

**Cavity wall (fixed glazing)**

$U_{Wall}$ = 0.13 W/(m$^2$ K)



| $\Psi_{install}$ | W/(m K) |
|---|---|
| Top | 0.023 |
| Left | 0.019 |
| Right | 0.019 |
| Bottom | 0.026 |

$U_{W,installed}$ = 0.83 W/(m$^2$ K)

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[1] Includes $\Delta U$ = 0.30 W/(m$^2$ K). Standard value

[2] Standard value. Glass carrier type: Non-metallic glass carrier with screws