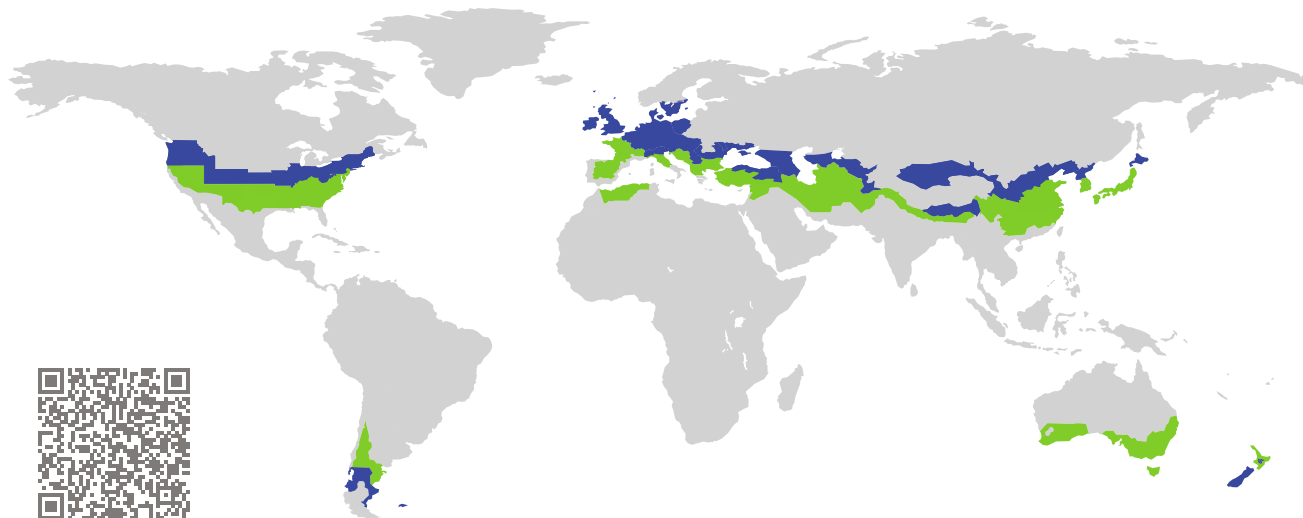


CERTIFICATE

Certified Passive House Component

Component-ID 2160wc03 valid until 31st December 2025

Passive House Institute
Dr. Wolfgang Feist
64283 Darmstadt
Germany

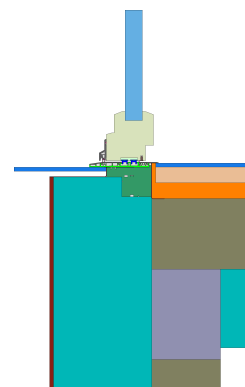


Category: **Window mounting system**
Manufacturer: **Alumat Frey GmbH,
Kaufbeuren, Germany**
Product name: **Type MHT 10/20 Type MFZ 10/20**

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

Comfort $U_{W,installed} \leq 0.85 \text{ W}/(\text{m}^2 \cdot \text{K})$
with $U_g = 0.70 \text{ W}/(\text{m}^2 \cdot \text{K})$

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

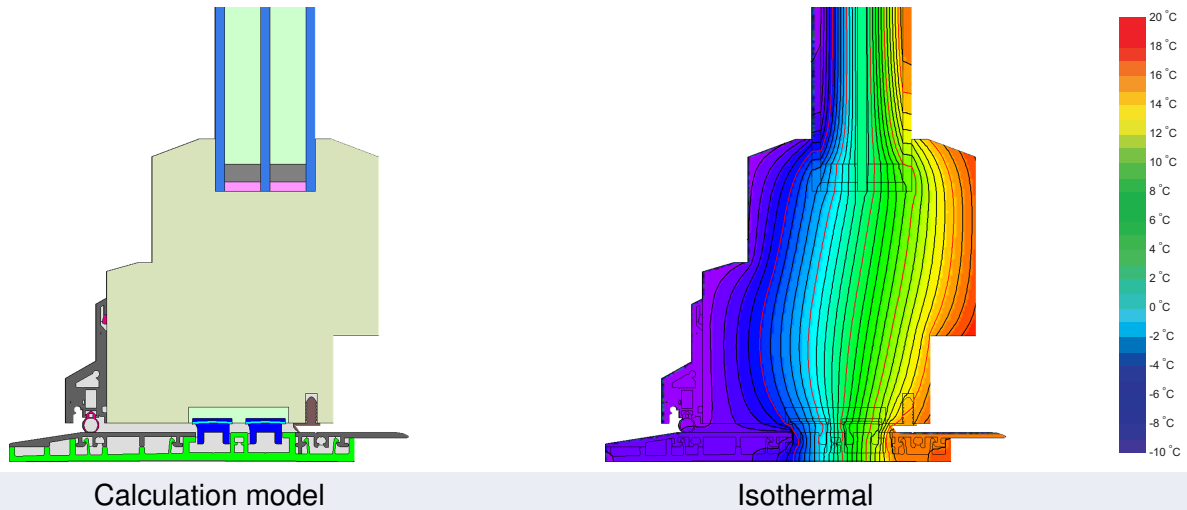


cool, temperate climate



**CERTIFIED
COMPONENT**

Passive House Institute



Description

Barrier-free comfort threshold without a lower door stop consisting of a plastic/aluminium composite with a magnetic seal and, if necessary, with load-bearing thermal insulation as a threshold base. In new buildings and renovations, the comfort thresholds are compatible with all passive house-compatible door and window profiles made of wood, wood/aluminum, PVC or aluminum of any depth. The U_w value of the reference window is $U_w = 0.80 \text{ W/m}^2\text{K}$. Taking the threshold profiles into account, the $U_w = 0.83 \text{ W/m}^2\text{K}$ (with MFZ 10, $U_f = 1.00 \text{ W/m}^2\text{K}$), $U_w = 0.84 \text{ W/m}^2\text{K}$ (with MHT 10, $U_f = 1.21 \text{ W/m}^2\text{K}$), $U_w = 0.85 \text{ W/m}^2\text{K}$ (with MHT 20, $U_f = 1.26 \text{ W/m}^2\text{K}$),

Explanation

The window U-values were calculated for the test window size of $1.23 \text{ m} \times 1.48 \text{ m}$ with $U_g = 0.70 \text{ W}/(\text{m}^2 \cdot \text{K})$. If a higher quality glazing is used, the window U-values will improve as follows:

Glazing	$U_g =$	0.70	0.64	0.58	0.54	$\text{W}/(\text{m}^2 \cdot \text{K})$
		↓	↓	↓	↓	
Window	$U_w =$	0.82	0.78	0.74	0.72	$\text{W}/(\text{m}^2 \cdot \text{K})$

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.

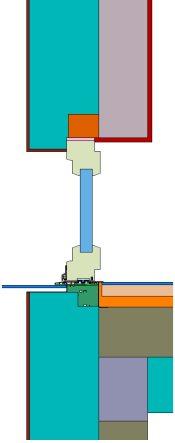
The Passive House Institute has defined international component criteria for seven climate zones. In principle, components which have been certified for climate zones with higher requirements may also be used in climates with less stringent requirements. In a particular climate zone it may make sense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

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



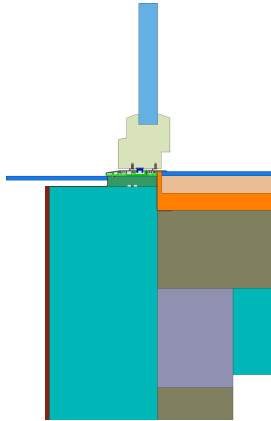
Ψ_{install}	W/(m · K)
Top	0.009
Side	0.009
Bottom	0.004

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

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 $f_{Rsi=0.25}$ [-]
Bottom	(OB1) 	142	1.00	0.034	0.70
Top	(OH1) 	125	0.73	0.036	0.70
Lateral	(OJ1) 	125	0.73	0.036	0.70
Spacer: PHI phB-Spacer			Secondary seal: Polysulfide		

MHT 10

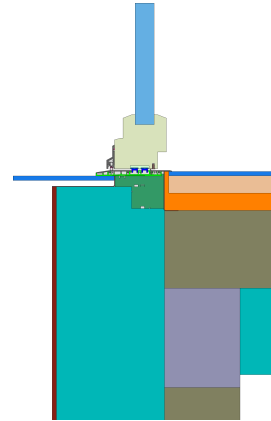
$$U_1 = 0.13 \quad U_2 = 0.14 \text{ [W/(m}^2 \cdot \text{K)]}$$



$$\Psi_{\text{install}} = 0.01 \text{ W/(m} \cdot \text{K)}$$

MFZ 10

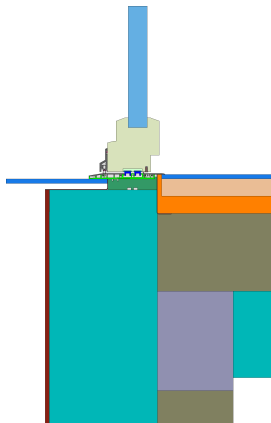
$$U_1 = 0.13 \quad U_2 = 0.14 \text{ [W/(m}^2 \cdot \text{K)]}$$



$$\Psi_{\text{install}} = 0.00 \text{ W/(m} \cdot \text{K)}$$

MFZ 10

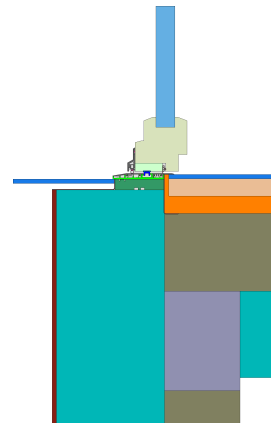
$$U_1 = 0.13 \quad U_2 = 0.14 \text{ [W/(m}^2 \cdot \text{K)]}$$



$$\Psi_{\text{install}} = 0.00 \text{ W/(m} \cdot \text{K)}$$

MHT 20

$$U_1 = 0.13 \quad U_2 = 0.14 \text{ [W/(m}^2 \cdot \text{K)]}$$



$$\Psi_{\text{install}} = 0.01 \text{ W/(m} \cdot \text{K)}$$