



TGI®-Spacer: Thermotechnical data according to Bundesverband Flachglas, Germany

Real values in comparison: Thermotechnical data of the TGI®-Spacer in comparison to Aluminium spacer bars. "The technical values are determined according to the standardized targets from study group "Warm Edge" of the Bundesverband Flachglas BF, Troisdorf, Germany."

Conditions:
 Total area window A_w 1,82 m²
 Share of frame 30% A_f 0,55 m²
 Share of glass 70% A_g 1,27 m²
 Length of the edge l_e 4,54 m



$$U_w = \frac{U_f \cdot A_f + U_g \cdot A_g + \psi \cdot l_e}{A_w}$$

U_w = thermal transmittance coefficient of window
 U_f = thermal transmittance coefficient of frame (window)
 U_g = thermal transmittance coefficient of glass
 A_w = area of window
 A_f = area of frame
 A_g = area of glass
 l_e = length of the edge of frame (spacer)
 ψ = linear thermal transmittance coefficient of edge system

$$T_{si} + f_{Rsi} \cdot (T_{li} - T_{la})$$

T_{si} = temperature of inner surface
 T_{li} = temperature of air inside + 20°C (68°F)
 T_{la} = temperature of air outside - 10°C (14°F)
 f_{Rsi} = temperature factor at $R_{si} = 0,20 \text{ m}^2/\text{KW}$

SS 15 PP 0,193	Frame	Wooden window		Plastic window		Aluminium window		Wooden/Alu window	
	2-pane-insulation glass	2 IG		2 IG		2 IG		2 IG	
		Aluminium- Spacer	TGI®-Spacer	Aluminium- Spacer	TGI®-Spacer	Aluminium- Spacer	TGI®-Spacer	Aluminium- Spacer	TGI®-Spacer
ψ -Value		0,081 W/mK	0,041 W/mK	0,077 W/mK	0,041 W/mK	0,111 W/mK	0,051 W/mK	0,092 W/mK	0,045 W/mK
U_w Window		1,36 W/m ² K	1,26 W/m ² K	1,32 W/m ² K	1,23 W/m ² K	1,53 W/m ² K	1,38 W/m ² K	1,42 W/m ² K	1,30 W/m ² K
f_{Rsi} Temperature factor		0,47	0,62	0,51	0,65	0,49	0,65	0,41	0,58
Surface- temperature T_{oi} at -10 °C, +20 °C		4,1 °C	8,6 °C	5,3 °C	9,5 °C	4,7 °C	9,5 °C	2,3 °C	7,4 °C
	3-pane-insulation glass	3 IG		3 IG		3 IG		3 IG	
		Aluminium- Spacer	TGI®-Spacer	Aluminium- Spacer	TGI®-Spacer	Aluminium- Spacer	TGI®-Spacer	Aluminium- Spacer	TGI®-Spacer
ψ -Value		0,086 W/mK	0,040 W/mK	0,075 W/mK	0,039 W/mK	0,111 W/mK	0,046 W/mK	0,097 W/mK	0,043 W/mK
U_w Window		1,10 W/m ² K	0,98 W/m ² K	1,04 W/m ² K	0,95 W/m ² K	1,25 W/m ² K	1,09 W/m ² K	1,15 W/m ² K	1,02 W/m ² K
f_{Rsi} Temperature factor		0,54	0,70	0,56	0,70	0,57	0,73	0,49	0,67
Surface- temperature T_{oi} at -10 °C, +20 °C		6,2 °C	11,0 °C	6,8 °C	11,0 °C	7,1 °C	11,9 °C	4,7 °C	10,1 °C

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