

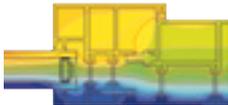


TGI®-Spacer: Thermotechnical data according to Bundesverband Flachglas, Germany

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."

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	
	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

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

$$T_{oi} = T_{ia} + f_{RSi} \cdot (T_{li} - T_{ia})$$

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

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