

SWISSPACER – thermic performance in different types of window

Spacer system	Double glazing				Triple glazing			
	Aluminium	Stainless steel	SWISSPACER	SWISSPACER V	Aluminium	Stainless steel	SWISSPACER	SWISSPACER V
Wooden frames: Frame value: $U_f =$ Glass value: $U_g =$	1.4 W/m ² K 1.1 W/m ² K				1.4 W/m ² K 0.7 W/m ² K			
Psi value [W/mK]	0.081	0.053	0.047	0.032	0.086	0.052	0.046	0.031
Window, U_w 1-sash [W/m ² K]	1.4	1.3	1.3	1.3	1.1	1.0	1.0	1.0
Window, U_w 2-sash [W/m ² K]	1.5	1.4	1.4	1.3	1.3	1.2	1.1	1.1
Minimal surface temperature* [°C]	6.5	9.2	10.0	11.2	8.2	11.2	11.7	13.2
PVC windows: Frame value: $U_f =$ Glass value: $U_g =$	1.2 W/m ² K 1.1 W/m ² K				1.2 W/m ² K 0.7 W/m ² K			
Psi value [W/mK]	0.077	0.051	0.045	0.034	0.075	0.048	0.042	0.032
Window, U_w 1-sash [W/m ² K]	1.3	1.3	1.2	1.2	1.0	1.0	1.0	0.9
Window, U_w 2-sash [W/m ² K]	1.4	1.3	1.3	1.3	1.2	1.1	1.0	1.0
Minimal surface temperature* [°C]	7.7	10.2	10.7	12.0	9.0	11.5	12.0	13.0
Wood-aluminium windows: Frame value: $U_f =$ Glass value: $U_g =$	1.4 W/m ² K 1.1 W/m ² K				1.4 W/m ² K 0.7 W/m ² K			
Psi value [W/mK]	0.092	0.058	0.052	0.035	0.097	0.058	0.051	0.033
Window, U_w 1-sash [W/m ² K]	1.4	1.3	1.3	1.3	1.2	1.1	1.0	1.0
Window, U_w 2-sash [W/m ² K]	1.6	1.4	1.4	1.3	1.3	1.2	1.2	1.1
Minimal surface temperature* [°C]	5.0	8.2	9.0	10.5	7.2	10.5	11.0	12.5
Aluminium windows: Frame value: $U_f =$ Glass value: $U_g =$	1.6 W/m ² K 1.1 W/m ² K				1.6 W/m ² K 0.7 W/m ² K			
Psi value [W/mK]	0.111	0.068	0.060	0.039	0.111	0.063	0.056	0.034
Window, U_w 1-sash [W/m ² K]	1.5	1.4	1.4	1.3	1.2	1.1	1.1	1.1
Window, U_w 2-sash [W/m ² K]	1.7	1.5	1.5	1.4	1.5	1.3	1.3	1.2
Minimal surface temperature* [°C]	7.2	10.2	10.7	12.0	9.2	12.2	12.7	14.0

The technical values were determined in accordance with ift guideline WA-08/1 "Thermally Optimised Spacers – Part 1: Determining the Representative Psi Value for Window Frame Profiles".

Psi value: linear heat conductivity at edge of glass [W/mK] to satisfy EN ISO 10077-2, 10/2003

* corresponds to the edge conditions set out in EN 10077

Outside temperature T_a : -5 °C

Window geometry

Total surface: (1.23 x 1.48 m)

Frame surface:

Length of glass edge:

window, 1 sash:

$A_w = 1.82 \text{ m}^2$

$A_f = 0.55 \text{ m}^2$

$l_g = 4.54 \text{ m}$

window, 2 sashes:

$A_w = 1.82 \text{ m}^2$

$A_f = 0.69 \text{ m}^2$

$l_g = 6.84 \text{ m}$

