Thermobar™

Warm Edge Spacer Tube

THERMOBAR - Thermal performance in various window types						
	DOUBLE GLAZING			TRIPLE GLAZING		
Spacer System	Aluminium	Stainless Steel	Thermobar	Aluminium	Stainless Steel	Thermobar
WOODEN WINDOWS:	Frame value: U_f =1.4 W/m²K; Glass value: U_g =1.1 W/m²K			Frame value: U_f =1.3 W/m²K; Glass value: U_g =0.7 W/m²K		
Psi value [W/mK]	0.082	0.053	0.031	0.089	0.054	0.029
Window, U_w 1-pane [W/m²K]	1.40	1.32	1.27	1.10	1.02	0.95
Window, U_w 2-pane [W/m²K]	1.52	1.41	1.33	1.26	1.13	1.04
Minimal surface temperature* [°C]	4.1	7.3	9.7	6	9.6	12.1
PVC WINDOWS:	Frame value: U_f =1.2 W/m²K; Glass value: U_g =1.1 W/m²K			Frame value: U_f =1.2 W/m²K; Glass value: U_g =0.7 W/m²K		
Psi value [W/mK]	0.076	0.051	0.032	0.078	0.050	0.030
Window, U_w 1-pane [W/m²K]	1.32	1.26	1.21	1.05	0.98	0.93
Window, U_w 2-pane [W/m²K]	1.42	1.33	1.26	1.19	1.08	1.01
Minimal surface temperature* [°C]	5.3	8.3	10.4	6.7	9.9	12.0
WOOD ALUMINIUM WINDOWS:	Frame value: U_f =1.4 W/m²K; Glass value: U_g =1.1 W/m²K			Frame value: U_f =1.4 W/m²K; Glass value: U_g =0.7 W/m²K		
Psi value [W/mK]	0.094	0.059	0.032	0.100	0.060	0.030
Window, U_w 1-pane [W/m²K]	1.43	1.34	1.28	1.17	1.08	1.00
Window, U_w 2-pane [W/m²K]	1.57	1.44	1.34	1.35	1.21	1.10
Minimal surface temperature* [°C]	2.2	6.1	8.8	4.4	8.6	11.3
ALUMINIUM WINDOWS:	Frame value: U_f =1.6 W/m²K; Glass value: U_g =1.1 W/m²K			Frame value: U_f =1.6 W/m²K; Glass value: U_g =0.7 W/m²K		
Psi value [W/mK]	0.110	0.068	0.036	0.120	0.064	0.031
Window, U_w 1-pane [W/m²K]	1.54	1.44	1.36	1.30	1.17	1.09
Window, U_w 2-pane [W/m²K]	1.72	1.56	1.45	1.53	1.32	1.21
Minimal surface temperature* [°C]	4.7	8.4	10.8	6.8	10.6	12.9

The quivalent heat conductivity was caluclated as per the ift WA-17/1 guidelines. The representative Psi values were calculated under the conditions laid down in the ift WA-08/2 guidelines.

Psi value: linear heat throughput at edge of glass [W/mK] as per EN ISO 10077-2:2012-06

* corresponds to conditions in DIN 4108-3

External temperature Ta: -10°C
Internal temperature Ti: +20°C

Geometry	Wood	PVC	Wood-Aluminium	Aluminium
Total Area: (1.23 x 1.48m) A_w in m²	1.82	1.82	1.82	1.82
Frame width b_f in mm:	110	117	120	130
Frame area A : in m²(1-pane/2-pane.)	0.548/0.686	0.579/0.725	0.593/0.742	0.637/0.796
Length of glass edge l_g : in m (1-pane/2-pane)	4.540/6.840	4.484/6.742	4.460/6.700	4.380/6.560

Bundesverband Flachglas

Gütegemeinschaft Mehrscheiben-Isolierglas