table of Uw-values according to GEG 2020 for historic wood-windows in W/(m²K)

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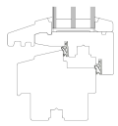
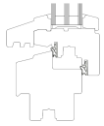
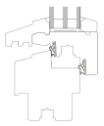
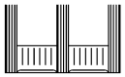
Wohnen mit Weitblick

standards according to GEG (2020) Uw = max. 1.3 W/(m²K)
standards according to KfW Uw = max. 0.95 W/(m²K)

Uw-value over 1.0 W/(m²K) are indicated with one decimal place!, e.g. 1.34 -> 1.3
Uw-value under 1.0 W/(m²K) are indicated with two decimal places!, e.g. 0.78 -> 0.78

system →			HDF 82 Stil			HDF 82 Antik			HDF 68 Stil			HDF 68 Antik		
cross-section (below) →														
building depth (in mm) →			82			82			68			68		
view width (in mm)	(laterally, above) →		103			98			103			98		
	(below) →		118			113			118			113		
type of wood	λ (W/mK) →		spruce	pine, larch/ oregon, meranti, accoya	oak	spruce	pine, larch/ oregon, meranti, accoya	oak	spruce	pine, larch/ oregon, meranti, accoya	oak	spruce	pine, larch/ oregon, meranti, accoya	oak
			0,11	0,13	0,18	0,11	0,13	0,18	0,11	0,13	0,18	0,11	0,13	0,18
Uf-value	W/(m²K) →		1,1	1,2	1,5	1,1	1,2	1,5	1,2	1,4	1,7	1,2	1,4	1,7
glazing	Ug-value W/(m²K)	Psi-value W/(mK)												
	0,5	0,029	0,75	0,78	0,86	0,74	0,77	0,85	constructively not possible			constructively not possible		
	0,6	0,029	0,82	0,85	0,94	0,81	0,84	0,92	constructively not possible			constructively not possible		
	0,7	0,029	0,89	0,92	1,0	0,89	0,91	1,0	constructively not possible			constructively not possible		
	0,8	0,029	0,96	0,99	1,1	0,96	0,99	1,1	0,99	1,0	1,1	0,99	1,0	1,1
	1,0	0,031	constructively not possible			constructively not possible			1,1	1,2	1,3	1,1	1,2	1,3
	1,1	0,031	constructively not possible			constructively not possible			1,2	1,3	1,4	1,2	1,3	1,3

values highlighted in green are suitable for passive houses

values highlighted in red exceeding the reference value of GEG 2020! (note approval in individual cases)

glass spacer:
-thermally insulated glass spacer (pvc) according to DIN EN ISO 10077-2 = 0.029 & 0.031 W/(mK)
-no arches possible

calculation basis and indication of source for:

Uf-value:	thermal transmittance coefficient for frame parts in W/(m²K)
Ug-value:	thermal transmittance coefficient for glazing according to DIN EN 673 in W/(m²K)
Uw-value:	mathematical determination of the thermal transmittance coefficient of windows in W/(m²K) according to DIN EN ISO 10077-1 (reference size 1230x1480mm), proportion of the frame approx. 30%
calculation:	calculation method according to DIN EN ISO 10077-2
reference size:	size of the test specimen according to DIN EN ISO 14351-1
Psi-value:	fundamentals of EN ISO 10077-2
sash-bars:	according to DIN EN ISO 14351 amendment (DIN 4108) or DIN EN ISO 10077-1:2018-01 table G.4

limitations for sash bars (according to DIN EN ISO 14351-1):

+ 0,1 W/(m²K)	single cross joint of sash bars between the glass panes
+ 0,2 W/(m²K)	multiple cross joint of sash bars between the glass panes
+ 0,4 W/(m²K)	glass dividing sash bars

As an alternative to flat-rate correction values, it can be taken into accounts as follows:

length-related heat transfer coefficient for pvc spacer bars (according to DIN EN ISO 10077-1:2018-01 table G.4):
with double glass: 0.040 W/(mK)
with triple glass, with rung in a cavity: 0.020 W/(mK)
with triple glass, with rung in both cavity: 0.030 W/(mK)

Assigment of wood types: (information on the density at 12% moisture):

wood type	german abbreviation	abbreviation DIN EN 13556	density according to VFF guideline HO.06 in (kg/m³)
spruce	FI	PCAB	ca. 460
pine	KI	PNSY	ca. 520
meranti	MER	SHLR	ca. 520
oregon	ORE	PSMN	ca. 530
larch	LA	LADC	ca. 570
oak	EI	QCXE	ca. 730
accoya		PNRD	ca. 530