

Product Passport

Door system in accordance to EN 14 351-1 +A1



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System	P50 doors
Product line	Uninsulated outward opening door and double leaf door/ partition walls
Materials	Aluminium: EN-AW 6063 T5 Gaskets: EPDM
Surface treatment	Anodizing Powder coating
Glass/ infill panel	thickness 3..33 mm
Frame depth	50 mm
Frame width	20..150 mm

Product standard (hEN):

EN 14 351-1:2006+A1:2010

Test reports:

VTT-S-04208-13
VTT-S-04209-13
VTT-S-04212-13
VTT-S-05512-13
EUF129-20002294-T2-EN
EUF129-24005020-T2-EN

Properties/ Class ^{*)}

Resistance to fire (E / EI) npd	Smoke leakage (S) npd	Self-closing (C) npd	Resistance to wind load C3	Watertightness 6A
Dangerous substances npd	Impact resistance (drop height) ***) 900	Load-bearing capacity of safety devices npd	Height **)	Ability to release npd
Acoustic performance R_w (C; C_{tr}) **) 37 (-2; -6) dB	Thermal transmittance (U_D) **) $\geq 2,8 \text{ W/m}^2\text{K}$	Radiation properties (g_D / τ_{vD}) **)	Air permeability 2	

*) Only tested/ calculated maximum values of the system for single leaf door

**) Declared value according to project

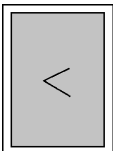
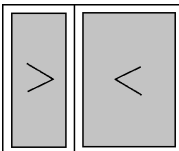
***) Relates windows and partition walls

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ref.No. for hEN-standard	Name:	P50 door	P50 double leaf door	P50 window
	Description:	 Uninsulated single leaf door	 Uninsulated double leaf door	 Uninsulated window/partition wall
-	Resistance to fire (E / EI)	npd	npd	npd
-	Smoke leakage (S)	npd	npd	npd
-	Self-closing (C)	npd	npd	npd
4.2	Resistance to wind load ¹⁾	C3	C3	npd
4.5	Watertightness ²⁾	6A	5A	npd
4.6	Dangerous substances	npd	npd	npd
4.7	Impact resistance	npd	npd	900
4.8	Load-bearing capacity of safety devices ¹⁾	npd	npd	npd
4.9	Height ³⁾	3)	3)	3)
4.10	Ability to release	npd	npd	npd
4.11	Acoustic performance ^{2) 3)}	R_w 34dB	R_w+C 33dB	R_w+C_{tr} 33dB
			R_w 33dB	R_w+C 32dB
				R_w+C_{tr} 31dB
				R_w 37dB
				R_w+C 37dB
				R_w+C_{tr} 34dB
4.12	Thermal transmittance ³⁾ (U_D)	$\geq 2,8 \text{ W/m}^2\text{K}$	$\geq 2,8 \text{ W/m}^2\text{K}$	$\geq 1,8 \text{ W/m}^2\text{K}$
4.13	Radiation properties ³⁾ (g_D / τ_v)	3)	3)	3)
4.14	Air permeability ²⁾	2	2	3

NOTE! Values in the table apply for single leaf door 990x 2090 mm and double leaf door 1520x 2090 mm excl. thermal transmittance which is calculated for standard size doors (1230x 2180 mm and 2000x 2180 mm)

¹⁾ Element size: single leaf door $\leq 2,1 \text{ m}^2$, double leaf door $\leq 3,2 \text{ m}^2$

²⁾ Element size: single leaf door $\leq 3,1 \text{ m}^2$, double leaf door $\leq 4,8 \text{ m}^2$

³⁾ Values according to project are declared separately

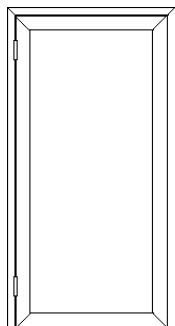
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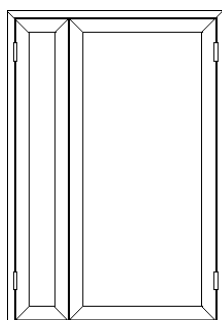
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P50 U_D -values for standard size doors:



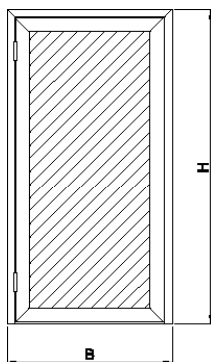
Single leaf door (1230x 2180 mm)

	Glass U_g -value (W/m ² K)		
	1,0	1,1	1,2
IGU spacer	Door U_D -arvo (W/m ² K)		
Aluminium and Stainless steel	2,8	2,9	3,0
TPS	2,8	2,9	2,9



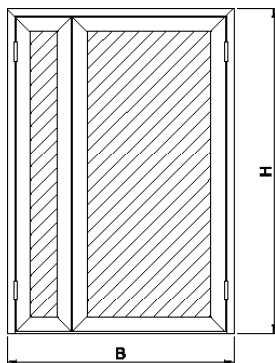
Double leaf door (2000x 2180 mm)

	Glass U_g -value (W/m ² K)		
	1,0	1,1	1,2
IGU spacer	Door U_D -arvo (W/m ² K)		
Aluminium and Stainless steel	2,9	2,9	3,0
TPS	2,8	2,9	3,0



Single leaf opaque panel door (panel U -value 0,9 W/m²K)

B (mm)	H (mm)	Door U_D -value (W/m ² K)
900	2200	3,1
1000	2200	3,0
1100	2200	2,8
1200	2200	2,7



Double leaf opaque panel door (panel U -value 0,9 W/m²K)

B (mm)	H (mm)	Door U_D -value (W/m ² K)
1400	2200	3,2
1600	2200	3,0
1800	2200	2,9
2000	2200	2,7
2200	2200	2,6
2400	2200	2,6

Tabulated U_D -values can be used for single leaf door (1230x 2180 mm) when the door size $\leq 3,6 \text{ m}^2$.
Tabulated U_D -values can be used for double leaf door (2000x 2180 mm) when the door size $> 3,6 \text{ m}^2$.
Specific values according to project are declared separately.

The thermal transmittance of the frames (U_f) are defined according to standard SFS-EN ISO 10077-2:2003

Laskennassa käytetyt eristyslasin välilistojen lisäkonduktanssit ψ_g		
Aluminium and Stainless steel	0,050 W/mK	according to SFS-EN ISO 10077-1:2006
TPS	0,040 W/mK	according to SFS-EN ISO 10077-1:2006

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P50 Doors acoustic performance:

Glazings:

- Glass-1:** 2k - 4 - 16 RST
Glass-2: 1k - lam 3+3,38
Glass-3: 1k - lam 4+4,38
Glass-4: 1k - Phon 12,8
Glass-5: F 10 / 16 LGY / Phon 44,2

Opaque panels:

- Panel-1:** 1,5 mm aluminium sheet - 2x 15 mm gypsum board - 1,5 mm aluminium sheet
Panel-2: 1,5 mm aluminium sheet - 4 mm plywood - 20 mm hard mineralwool
 - 4 mm plywood - 1,5 mm aluminium sheet
Panel-3: 1,5 mm aluminium sheet - 4 mm plywood - 20 mm PUR-board - 4 mm plywood
 - 1,5 mm aluminium sheet



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Number of door leaves	Door type	Tested glazing panel	R_w [dB]	$R_w + C$ [dB]	$R_w + C_{tr}$ [dB]
1	Fully glazed door	Glass-1	34	32	30
1	Fully glazed door	Glass-2	33	33	32
1	Fully glazed door	Glass-3	34	34	32
1	Fully glazed door	Glass-4	34	33	33
1	Glass door with transom	Glass-1	34	33	30
1	Glass door with transom	Glass-2	34	33	32
1	Glass door with transom	Glass-3	34	34	33
1	Panel door with transom	Panel-1	34	34	32
1	Panel door with transom	Panel-2	37	35	31
1	Panel door with transom	Panel-3	32	31	29
1	Glass door with panel	Glass-1 Panel-2	35	34	31
1	Glass door with panel	Glass-1 Panel-3	33	32	30
1	Glass door with panel	Glass-3 Panel-1	35	34	33
1	Glass door with panel	Glass-3 Panel-2	36	35	32
1	Glass door with panel	Glass-3 Panel-3	33	32	30
1	Glass door with panel	Glass-4 Panel-2	36	35	33
2	Fully glazed door	Glass-2	33	32	31
2	Fully glazed door	Glass-4	33	32	31
2	Fully glazed door	Glass-5	34	33	32
2	Glass door with transom	Glass-2	33	32	31
2	Panel door with transom	Panel-2	36	35	31
2	Glass door with panel	Glass-3 Panel-2	36	35	32
2	Glass door with panel	Glass-3 Panel-3	32	32	30

Tested door sizes and maximum total areas (A) of doors:

- Single leaf doors: **990x 2090 mm** $0 \text{ m}^2 < A \leq 3,1 \text{ m}^2$
 Double leaf doors: **1520x 2090 mm** $0 \text{ m}^2 < A \leq 4,8 \text{ m}^2$

- Terms: R_w Sound reduction index (the higher the R_w number, the better the sound insulation)
 $R_w + C$ Jet aircraft noise, sounds of fast trains, industrial noise (high and mid frequency)
 $R_w + C_{tr}$ City traffic noise, sounds of slow trains, industrial noise (low and mid frequency)

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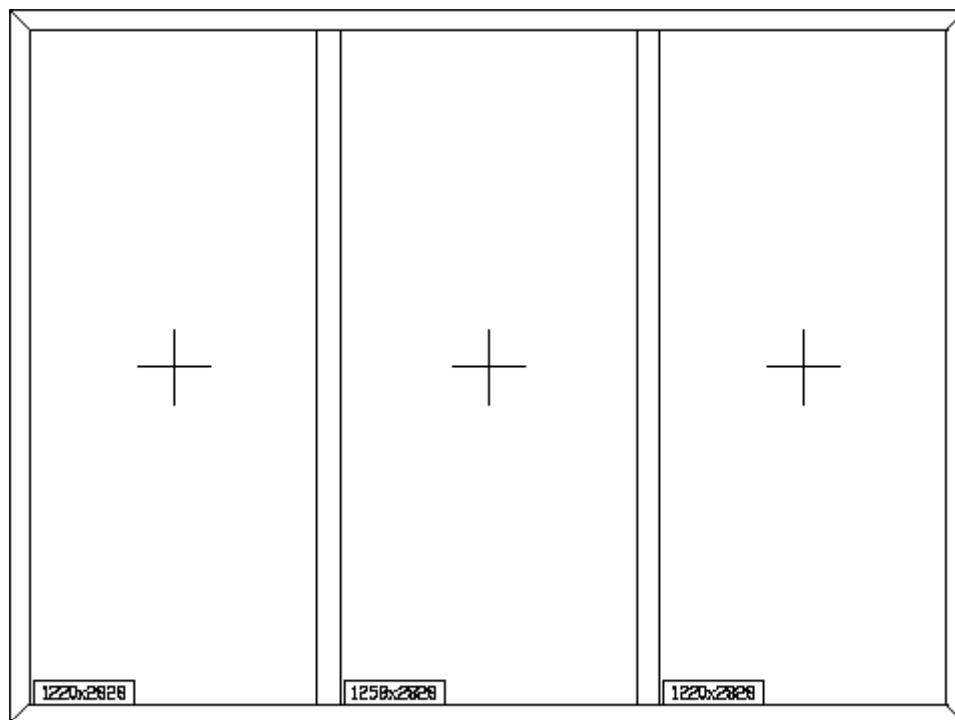
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P50 Partition wall systems acoustic performance:

Glazings:

Glass-1: 1k - Phon 12,8

Glass-2: F 10 / 16 LGY / Phon 44,2



Tested wall sizes:

Glass wall: **3970x 2970 mm**

Number of windows	Wall type	Tested glazing panel	R_w [dB]	$R_w + C$ [dB]	$R_w + C_{tr}$ [dB]
3	Fully glazed wall	Glass-1	37	37	34
3	Fully glazed wall	Glass-2	39	38	35

Terms: R_w Sound reduction index (the higher the R_w number, the better the sound insulation)

$R_w + C$ Jet aircraft noise, sounds of fast trains, industrial noise (high and mid frequency)

$R_w + C_{tr}$ City traffic noise, sounds of slow trains, industrial noise (low and mid frequency)