

# Product Passport

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



Purso Oy  
Alumiinitie 1  
FI-37200 Siuro, Finland  
Tel. +358 3 3404 111  
Fax +358 3 3404 500  
E-mail [purso@purso.fi](mailto:purso@purso.fi)  
web [www.purso.fi](http://www.purso.fi)

System	<b>LK90H doors</b>
Product line	Thermally insulated outward opening door and double leaf door
Materials	Aluminium: EN-AW 6063 T5 Thermal breaks: polyamide Gaskets: EPDM
Surface treatment	Anodizing Powder coating
Glass/ infill panel	thickness 33..73 mm
Frame depth	90 mm
Frame width	50..95 mm

Product standard (hEN):

EN 14 351-1:2006+A1:2010

Test reports:

VTT-S-04206-13  
VTT-S-04207-13  
VTT-S-04211-13  
VTT-S-05921-14  
VTT-S-05922-14  
VTT-S-04201-13  
14/8749-936  
14/8749-937  
15/11460-3015  
15/11460-3017

## Properties/ Class \*)

Resistance to fire (E / EI)  npd	Smoke leakage (S)  npd	Self-closing (C)  npd	Resistance to wind load  <b>C3</b>	Watertightness  <b>8A</b>
Dangerous substances  npd	Impact resistance  npd	Load-bearing capacity of safety devices  npd	Height  **)	Ability to release  npd
Acoustic performance $R_w$ (C; $C_{tr}$ )  **) <b>43 (-1; -3) dB</b>	Thermal transmittance ( $U_D$ )  **) <b>≥ 0,90 W/m<sup>2</sup>K</b>	Radiation properties ( $g_D$ / $\tau_{v}$ )  **)	Air permeability  <b>4</b>	

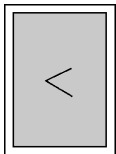
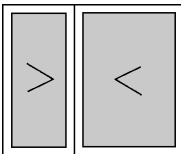
\*) Only tested/ calculated maximum values of the system for single leaf door

\*\*) Declared value according to project

# Product Passport

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

Purso Oy  
Alumiinitie 1  
FI-37200 Siuro, Finland  
Tel. +358 3 3404 111  
Fax +358 3 3404 500  
E-mail [purso@purso.fi](mailto:purso@purso.fi)  
web [www.purso.fi](http://www.purso.fi)

ref.No. for hEN-standard	Name:	LK90H door	LK90H double leaf door				
	Description:		Thermally insulated single leaf door		Thermally insulated double leaf door		
-	Resistance to fire (E / EI)	npd	npd				
-	Smoke leakage (S)	npd	npd				
-	Self-closing (C)	npd	npd				
4.2	Resistance to wind load <sup>1)</sup>	<b>C3</b> (1200 Pa, ≤1/300)	<b>C3</b> (1200 Pa, ≤1/300)				
4.5	Watertightness <sup>2)</sup>	<b>8A</b>	<b>6A</b>				
4.6	Dangerous substances	npd	npd				
4.7	Impact resistance	npd	npd				
4.8	Load-bearing capacity of safety devices <sup>1)</sup>	npd	npd				
4.9	Height <sup>3)</sup>	3)	3)				
4.10	Ability to release	npd	npd				
4.11	Acoustic performance <sup>2) 3)</sup>	$R_w$ 43dB	$R_w+C$ 42dB	$R_w+C_{tr}$ 40dB	$R_w$ 41dB	$R_w+C$ 40dB	$R_w+C_{tr}$ 39dB
4.12	Thermal transmittance <sup>3)</sup> ( $U_D$ )	≥ 0,90 W/m <sup>2</sup> K		≥ 0,91 W/m <sup>2</sup> K			
4.13	Radiation properties <sup>3)</sup> ( $g_D / \tau_v$ )	3)		3)			
4.14	Air permeability <sup>2)</sup>	<b>4</b>		<b>3</b>			

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 door (1230x 2180 mm and 2000x 2180 mm)

<sup>1)</sup> Element size: single leaf door ≤ 2,1 m<sup>2</sup>, double leaf door ≤ 3,2 m<sup>2</sup>

<sup>2)</sup> Element size: single leaf door ≤ 3,1 m<sup>2</sup>, double leaf door ≤ 4,8 m<sup>2</sup>

<sup>3)</sup> Values according to project are declared separately

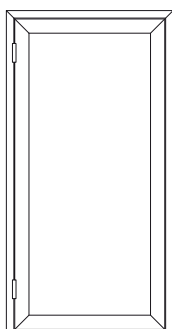
# Product Passport

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

Purso Oy  
Alumiinitie 1  
FI-37200 Siuro, Finland  
Tel. +358 3 3404 111  
Fax +358 3 3404 500  
E-mail [purso@purso.fi](mailto:purso@purso.fi)  
web [www.purso.fi](http://www.purso.fi)

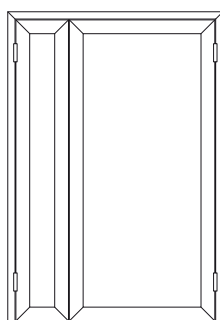
**LK90H**  $U_D$ -values for standard size door:

Single leaf door (1230x 2180 mm)



	Glass $U_g$ -value (W/m <sup>2</sup> K)	
	0,5	0,6
IGU spacer	Door $U_D$ -arvo (W/m <sup>2</sup> K)	
TGI (0,044 W/mK)	0,91	0,98
TPS (0,038 W/mK)	0,90	0,96

Double leaf door (2000x 2180 mm)



	Glass $U_g$ -value (W/m <sup>2</sup> K)	
	0,5	0,6
IGU spacer	Door $U_D$ -arvo (W/m <sup>2</sup> K)	
TGI (0,044 W/mK)	0,91	0,98
TPS (0,038 W/mK)	0,90	0,97

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 10077-2:2012

IGU = Insulating Glass Unit

# Product Passport

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

Purso Oy  
 Alumiinitie 1  
 FI-37200 Siuro, Finland  
 Tel. +358 3 3404 111  
 Fax +358 3 3404 500  
 E-mail [purso@purso.fi](mailto:purso@purso.fi)  
 web [www.purso.fi](http://www.purso.fi)

## LK90 Single leaf doors acoustic performance:

Glazings:

- Glass-1:** 3K 4-18-4-18-4
- Glass-2:** 3K 6-16-4-18-6
- Glass-3:** 3K 6-16-4-16-8
- Glass-4:** 3K 13.1Phon-18-6-18-9.1Phon
- Glass-5:** 3K 6-16-4-16-9.1Phon

Opaque panels:

- UO-1:** 1,5 mm aluminium sheet - 6 mm HDF - 50 mm PUR - 6 mm HDF - 1,5 mm aluminium sheet
- UO-2:** 1,5 mm aluminium sheet - 6 mm HDF - 50 mm hard mineral wool - 6 mm HDF -1,5 mm aluminium sheet
- UO-3:** 1,5 mm aluminium sheet - 9 mm fibre-cement sheet - 50 mm hard mineral wool - 9 mm fibre-cement sheet - 1,5 mm aluminium sheet
- UO-4:** 1,5 mm aluminium sheet- 13 mm gypsum board - 50 mm PUR - 13 mm gypsum board - 1,5 mm aluminium sheet
- UO-5:** 1,5 mm aluminium sheet - 9 mm fibre-cement sheet - 50 mm PUR - 9 mm fibre-cement sheet - 1,5 mm aluminium sheet
- UO-6:** 1,5 mm aluminium sheet - 13 mm gypsum board - 50 mm hard mineral wool - 13 mm gypsum board - 1,5 mm aluminium sheet

Number of door leaves	Door type	Tested glazing   panel	R <sub>w</sub> [dB]	R <sub>w</sub> + C [dB]	R <sub>w</sub> + C <sub>tr</sub> [dB]
1	Fully glazed door	Glass-1	35	33	30
1	Fully glazed door	Glass-2	38	36	33
1	Fully glazed door	Glass-3	39	38	34
1	Fully glazed door	Glass-4	42	42	40
1	Fully glazed door	Glass-5	41	39	35
1	Glass door with panel	Glass-1   UO-1	36	35	32
1	Glass door with panel	Glass-2   UO-2	40	39	34
1	Glass door with panel	Glass-2   UO-3	40	40	36
1	Glass door with panel	Glass-2   UO-4	38	37	34
1	Glass door with panel	Glass-2   UO-5	39	38	35
1	Glass door with panel	Glass-2   UO-6	41	40	36
1	Glass door with panel	Glass-4   UO-6	43	42	38
1	Glass door with panel	Glass-5   UO-6	42	41	37
1	Glass door with panel	Glass-3   UO-6	42	41	37
1	Glass door with panel	Glass-4   UO-3	43	42	40

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

Single leaf doors: **990x 2090 mm** **0 m<sup>2</sup> < A ≤ 3,1 m<sup>2</sup>**

- Terms: **R<sub>w</sub>** Sound reduction index (the higher the R<sub>w</sub> number, the better the sound insulation)  
**R<sub>w</sub>+C** Jet aircraft noise, sounds of fast trains, industrial noise (high and mid frequency)  
**R<sub>w</sub>+C<sub>tr</sub>** City traffic noise, sounds of slow trains, industrial noise (low and mid frequency)

# Product Passport

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



Purso Oy  
Alumiinitie 1  
FI-37200 Siuro, Finland  
Tel. +358 3 3404 111  
Fax +358 3 3404 500  
E-mail [purso@purso.fi](mailto:purso@purso.fi)  
web [www.purso.fi](http://www.purso.fi)

## LK90H Double leaf doors acoustic performance:

Glazings:

**Glass-1:** 3K 4-16-4-16-4 RST

**Glass-2:** 3K 13.1Phon-12-6-12-9.1Phon

Opaque panels:

**UO-1:** 1,5 mm aluminium sheet - 4 mm plywood - 50 mm PUR - 4 mm plywood - 1,5 mm aluminium sheet

**UO-2:** 1,5 mm aluminium sheet - 9 mm fibre-cement sheet - 40 mm hard mineral wool - 9 mm fibre-cement sheet - 1,5 mm aluminium sheet

Number of door leaves	Door type	Tested glazing   panel	R <sub>w</sub> [dB]	R <sub>w</sub> + C [dB]	R <sub>w</sub> + C <sub>tr</sub> [dB]
2	Fully glazed door	Glass-1	35	33	30
2	Fully glazed door	Glass-2	41	40	39
2	Glass door with transom	Glass-1	35	34	30
2	Glass door with transom	Glass-2	41	40	39
2	Panel door with transom	UO-1	32	31	28
2	Panel door with transom	UO-2	40	39	35
2	Glass door with panel	Glass-1   UO-1	33	32	29
2	Glass door with panel	Glass-1   UO-2	37	35	32
2	Glass door with panel	Glass-2   UO-1	40	39	37

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

Double leaf doors: **1520x 2090 mm**  $m^2 < A \leq 4,8 m^2$

Terms: **R<sub>w</sub>** Sound reduction index (the higher the R<sub>w</sub> number, the better the sound insulation)

**R<sub>w</sub>+C** Jet aircraft noise, sounds of fast trains, industrial noise (high and mid frequency)

**R<sub>w</sub>+C<sub>tr</sub>** City traffic noise, sounds of slow trains, industrial noise (low and mid frequency)