# **FRINORM**<sup>®</sup>

## Frame extension elements for wooden and wood-metal windows Moisture-resistant and with sound insulation

#### SOUND INSULATION 1 UNTREATED

Cover panel and surface	Plywood panel AW100, untreated, 12 mm
Thermal insulation	Glass wool, 20 kg/m³, 15–83 mm
Sound insulation	1 piece of heavy bitumen foil, 5 mm
Bonding	Water-resistant D3 (EN 204-D3)
Edge band	<b>Spruce pine, circumferential</b> (PEFC-certified) Other types of wood are available; special edge bands can be inset according to your requirements
Edge milling	All possible CNC edge profile work is performed on all sides according to your profile specifications Special CNC processing like cut-outs, round and segment arches, ventilation slots or surface grooves are also possible
Thicknesses	Thicknesses from 44 to 112 mm can be produced For thicknesses of 113 mm and more, see extension elements for wooden lifting sliding doors For thicknesses below 44 mm, see infill for wooden windows
Formats	All formats from 500 × 95 mm to 3088 × 1294 mm can be produced

Element thicknesses from 44 to 112 mm can be produced. For further U-value calculations, please contact our consultants.														
Element thickness	mm	44	50	54	58	64	68	70	74	80	84	94	104	112
Cover panel thickness	mm	12	12	12	12	12	12	12	12	12	12	12	12	12
Thermal insulation thickness	mm	15	21	25	29	35	39	41	45	51	55	65	75	83
Sound insulation thickness	mm	5	5	5	5	5	5	5	5	5	5	5	5	5
U-value	W/m²K	1.261	1.037	0.928	0.838	0.733	0.677	0.651	0.606	0.549	0.517	0.450	0.399	0.366
Airborne sound insulation	<b>38 dB,</b> el	ement thi	ckness: {	54 mm; t	est surfa	ce: 2.3 m	n² (downl	oad test	reports)					
Weight	kg/m <sup>2</sup>	22.3	22.4	22.5	22.6	22.7	22.7	22.8	22.9	23.0	23.0	23.2	23.4	23.6

#### SOUND INSULATION 2 UNTREATED

Cover panel and surface	Plywood panel AW100, untreated, 12 mm
Thermal insulation	Glass wool, 20 kg/m <sup>3</sup> , 10–78 mm
Sound insulation	2 pieces of heavy bitumen foil, 5 mm
Bonding	Water-resistant D3 (EN 204-D3)
Edge band	<b>Spruce pine, circumferential</b> (PEFC-certified) Other types of wood are available; special edge bands can be inset according to your requirements
Edge milling	All possible CNC edge profile work is performed on all sides according to your profile specifications Special CNC processing like cut-outs, round and segment arches, ventilation slots or surface grooves are also possible
Thicknesses	Thicknesses from 44 to 112 mm can be produced For thicknesses of 113 mm and more, see extension elements for wooden lifting sliding doors For thicknesses below 44 mm, see infill for wooden windows
Formats	All formats from 500 × 95 mm to 3088 × 1294 mm can be produced

Element thicknesses from 44 to 112 mm can be produced. For further U-value calculations, please contact our consultants.														
Element thickness	mm	44	50	54	58	64	68	70	74	80	84	94	104	112
Cover panel thickness	mm	12	12	12	12	12	12	12	12	12	12	12	12	12
Thermal insulation thickness	mm	10	16	20	24	30	34	36	40	46	50	60	70	78
Sound insulation thickness	mm	2×5	2×5	2×5	2×5	2×5	2×5	2×5	2×5	2×5	2×5	2×5	$2 \times 5$	2×5
U-value	W/m²K	1.514	1.202	1.057	0.943	0.812	0.743	0.713	0.659	0.592	0.555	0.479	0.421	0.384
Airborne sound insulation	<b>40 dB,</b> el	40 dB, element thickness: 54 mm; test surface: 2.3 m <sup>2</sup> (download test reports)												
Weight	kg/m <sup>2</sup>	32.2	32.3	32.4	32.5	32.6	32.6	32.7	32.8	32.9	33.0	33.2	33.4	33.5

### SOUND INSULATION 1 PRIMER FOIL

Cover panel and surface	Plywood panel AW100, with white primer foil, 8 mm
Thermal insulation	Glass wool, 20 kg/m³, 23-91 mm
Sound insulation	1 piece of heavy bitumen foil, 5 mm
Bonding	Water-resistant D3 (EN 204-D3)
Edge band	<b>Spruce pine, circumferential</b> (PEFC-certified) Other types of wood are available; special edge bands can be inset according to your requirements
Edge milling	All possible CNC edge profile work is performed on all sides according to your profile specifications Special CNC processing like cut-outs, round and segment arches, ventilation slots or surface grooves are also possible
Thicknesses	Thicknesses from 44 to 112 mm can be produced For thicknesses of 113 mm and more, see extension elements for wooden lifting sliding doors For thicknesses below 44 mm, see infill for wooden windows
Formats	All formats from 500 × 95 mm to 2988 × 1294 mm can be produced

Element thicknesses from 44 to 112 mm can be produced. For further U-value calculations, please contact our consultants.														
Element thickness	mm	44	50	54	58	64	68	70	74	80	84	94	104	112
Cover panel thickness	mm	8	8	8	8	8	8	8	8	8	8	8	8	8
Thermal insulation thickness	mm	23	29	33	37	43	47	49	53	59	63	73	83	91
Sound insulation thickness	mm	5	5	5	5	5	5	5	5	5	5	5	5	5
U-value	W/m²K	1,057	0,895	0,812	0,743	0,659	0,613	0,592	0,555	0,506	0,479	0,421	0,376	0,346
Airborne sound insulation	<b>38 dB,</b> el	ement thi	ickness: {	54 mm; t	est surfa	ice: 2.3 r	n² (down	load test	reports)					
Weight	kg/m <sup>2</sup>	g/m <sup>2</sup> 22,0 22,1 22,2 22,3 22,4 22,5 22,5 22,6 22,7 22,8 22,8 22,9 23,00											23,00	

## SOUND INSULATION 2 PRIMER FOIL

Cover panel and surface	Plywood panel AW100, with white primer foil, 8 mm
Thermal insulation	Glass wool, 20 kg/m³, 18–86 mm
Sound insulation	2 piece of heavy bitumen foil, 5 mm
Bonding	Water-resistant D3 (EN 204-D3)
Edge band	<b>Spruce pine, circumferential</b> (PEFC-certified) Other types of wood are available; special edge bands can be inset according to your requirements
Edge milling	All possible CNC edge profile work is performed on all sides according to your profile specifications Special CNC processing like cut-outs, round and segment arches, ventilation slots or surface grooves are also possible
Thicknesses	Thicknesses from 44 to 112 mm can be produced For thicknesses of 113 mm and more, see extension elements for wooden lifting sliding doors For thicknesses below 44 mm, see infill for wooden windows
Formats	All formats from 500 × 95 mm to 2988 × 1294 mm can be produced

Element thicknesses from 44 to 112 mm can be produced. For further U-value calculations, please contact our consultants.														
Element thickness	mm	44	50	54	58	64	68	70	74	80	84	94	104	112
Cover panel thickness	mm	8	8	8	8	8	8	8	8	8	8	8	8	8
Thermal insulation thickness	mm	18 24 28 32 38 42 44 48 54 58 68 78 86												
Sound insulation thickness	mm	2×5	2×5	2×5	2×5	2×5	2×5	2×5	2×5	2×5	2×5	2×5	2×5	$2 \times 5$
U-value	W/m²K	1,230	1,016	0,910	0,824	0,722	0,667	0,643	0,599	0,543	0,511	0,446	0,396	0,363
Airborne sound insulation	<b>40 dB,</b> el	ement thi	ckness: {	54 mm; t	est surfa	ice: 2.3 r	n² (down	load test	reports)					
Weight	kg/m <sup>2</sup>	g/m <sup>2</sup> 31,9 32,0 32,1 32,2 32,3 32,4 32,4 32,5 32,6 32,7 32,7 32,8 33,0												

## SOUND INSULATION 1 VENEERED

Cover panel and surface	All types of	Plywood panel AW100, 12 mm, with real wood veneer, 1 mm All types of real wood veneers available: spruce, pine, larch, fir, oak, etc. (FSC- or PEFC-certified) Veneer quality A/B (inside A/outside B) or A/A (inside A/outside A)												
Thermal insulation	Glass w	ass wool, 20 kg/m³, 13–81 mm												
Sound insulation	1 piece	piece of heavy bitumen foil, 5 mm												
Bonding	Water-re	ater-resistant D3 (EN 204-D3)												
Edge band		<b>pruce pine, circumferential</b> (PEFC-certified) her types of wood are available; special edge bands can be inset according to your requirements												
Edge milling		All possible CNC edge profile work is performed on all sides according to your profile specifications Special CNC processing like cut-outs, round and segment arches, ventilation slots or surface grooves are also possible												
Thicknesses	Thickne For thickn For thickn	esses of 1	113 mm :	and more	e, see ext	tension e	lements	for wooc	len lifting	sliding de	oors			
Formats	All form	ats from	500 × 9	95 mm 1	to 3088	× 1294	mm ca	an be p	roduced	ł				
Element thicknesses from 44	4 to 112 mr	n can be	produc	ed. For	further l	J-value	calculat	tions, pl	ease coi	ntact ou	ır consu	ltants.		
Element thickness	mm	44	50	54	58	64	68	70	74	80	84	94	104	112
Cover panel thickness	mm	mm 12 12 12 12 12 12 12 12 12 12 12 12 12												12
Veneer thickness	mm	1	1	1	1	1	1	1	1	1	1	1	1	1
		10	10		~ =		~ =			10	= 0		= 0	

Weight	kg/m <sup>2</sup>	23.2	23.3	23.4	23.5	23.6	23.6	23.7	23.7	23.9	24.0	24.2	24.4	24.6
Airborne sound insulation	<b>38 dB,</b> element thickness: 54 mm; test surface: 2.3 m <sup>2</sup> (download test reports)													
U-value	W/m <sup>2</sup> K	1.333	1.085	0.965	0.869	0.757	0.696	0.670	0.633	0.562	0.528	0.459	0.406	0.371
Sound insulation thickness	mm	5	5	5	5	5	5	5	5	5	5	5	5	5
Thermal insulation thickness	mm	13	19	23	27	33	37	39	43	49	53	63	73	81

#### SOUND INSULATION 2 VENEERED

Cover panel and surface	All types o	<b>Plywood panel AW100, 12 mm, with real wood veneer, 1 mm</b> All types of real wood veneers available: spruce, pine, larch, fir, oak, etc. (FSC- or PEFC-certified) Veneer quality A/B (inside A/outside B) or A/A (inside A/outside A)												
Thermal insulation	Glass wo	lass wool, 20 kg/m³, 8–76 mm												
Sound insulation	2 pieces	pieces of heavy bitumen foil, 5 mm												
Bonding	Water-res	/ater-resistant D3 (EN 204-D3)												
Edge band	• •	bruce pine, circumferential (PEFC-certified) her types of wood are available; special edge bands can be inset according to your requirements												
Edge milling		Il possible CNC edge profile work is performed on all sides according to your profile specifications pecial CNC processing like cut-outs, round and segment arches, ventilation slots or surface grooves are also possible												
Thicknesses	Thicknes For thicknes For thicknes	esses of <sup>-</sup>	113 mm a	and more	e, see ex	tension e	lements f	for wood	en lifting	sliding d	oors			
Formats	All forma	ts from	500 × 9	95 mm 1	to 3088	× 1294	mm ca	ın be pı	oduced	k				
Element thicknesses from 44	to 112 mm	ı can be	produc	ed. For	further	U-value	calculat	ions, ple	ease co	ntact ou	ır consu	ltants.		
Element thickness	mm	44	50	54	58	64	68	70	74	80	84	94	104	112
Cover panel thickness	mm	12	12	12	12	12	12	12	12	12	12	12	12	12
Veneer thickness	mm	1	1	1	1	1	1	1	1	1	1	1	1	1
Thermal insulation thickness	mm	8	14	18	22	28	32	34	38	44	48	58	68	76
Sound insulation thickness	mm	$2 \times 5$	$2 \times 5$	$2 \times 5$	$2 \times 5$	$2 \times 5$	$2 \times 5$	$2 \times 5$	$2 \times 5$	$2 \times 5$	$2 \times 5$	$2 \times 5$	$2 \times 5$	$2 \times 5$

Sound insulation thickness	(T)(T)	2×5	2×5	2×5	2 × 5	2×5	2×5	Z×D	2×5	2×5	Z×D	2×5	Z×D	Z×D
U-value	W/m²K	1.620	1.268	1.107	0.983	0.841	0.767	0.735	0.678	0.608	0.568	0.489	0.429	0.391
Airborne sound insulation	<b>40 dB,</b> element thickness: 54 mm; test surface: 2.3 m <sup>2</sup> (download test reports)													
Weight	kg/m <sup>2</sup>	33.1	33.2	33.3	33.4	33.5	33.6	33.6	33.7	33.8	33,9	34.1	34.3	34.5