ambiente

Internorm
Windows – Doors

HV 450 TIMBER-ALUMINIUM-COMPOSITE WINDOW



CHARACTERISTICS

Thermal insulation (in W/m²K)
U_w up to 0,62

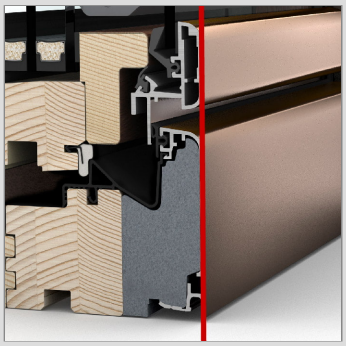
Sound reduction (in dB)
up to 39-47

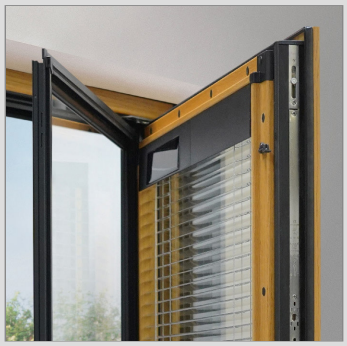
Security
up to RC1N, RC2

Locking
fully concealed

Installation Depth (in mm)
85

I-tec Shading
I-tec Glazing
I-tec Connect







The flush transition from frame to sash and the integrated sun protection between the panes unite the HV 450 into a single unit. Venetian, Roman or black-out Duette® blinds are integrated between accessible panes, and are protected from the weather and dirt. With perfect sun, privacy, thermal and sound protection, you can enjoy quadruple protection in just one window. I-tec Shading with photovoltaic module and battery is completely energy self-sufficient and also offers many useful functions.

TIMBER-ALUMINIUM-COMPOSITE WINDOW

HV 450

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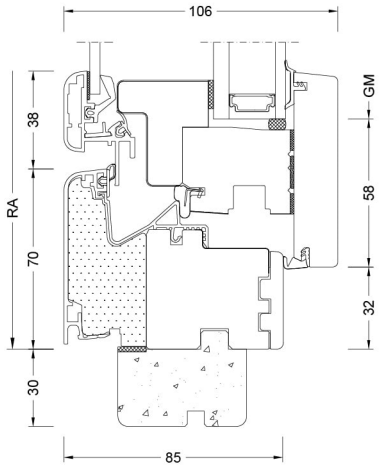
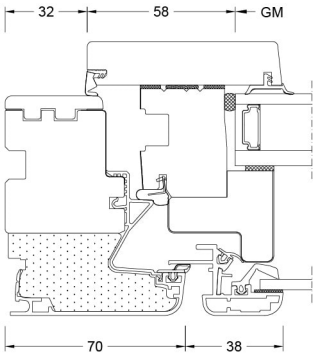
Cuts

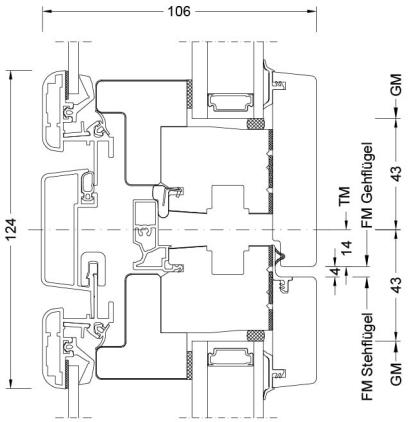
Senkrecht / Vertical



Waagrecht / Horizontal



Stulp / Flying mullion



BM Bestellmaß / Ordering size
FM G Flügelmaß Gehflügel / Sash size master sash
FM S Flügelmaß Stehflügel / Sash size slave sash
FOK Fußbodenoberkante / Finished floor level

GM Glasmaß / Glass size
RA Rahmenaußenmaß / Outside frame size
TM Teilungsmaß / Division size

Values

Glass Build Up	GC	Coating	AH	U_g	g	U_f	Psi	U_w	R_w	C	Ctr	Certificate - Thermal Performance	Certificate - Sound
6 // 6/18Ar/b4	111, 2KU	Low-Carbon iplus	Iso	1,1	-	0,94	-	-	42	-3	-9	×	✓
4 // 3bESG/10Kr/2TVG/10Kr/b3ESG	100, 37F	Low-Carbon iplus	Iso	0,6	-	0,94	0,027	0,7	-	-	-	✓	×
4 // 4ESG/20Ar/b4	100, 2KL	Low-Carbon iplus	Iso	1,1	-	0,94	0,022	0,97	-	-	-	✓	×
4 // 4bESG/12Kr/4/12Kr/b4ESG	100, 3A1	Low-Carbon iplus	Iso	0,5	-	0,92	0,029	0,63	-	-	-	✓	×
4 // 4bESG/10Ar/3/12Ar/b33.2(VSG)	100, 3HP	Low-Carbon iplus	Iso	0,8	-	0,92	0,028	0,84	43	-3	-7	✓	✓
4 // 6/18Ar/b4	100, 2KU	Low-Carbon iplus	Iso	1,1	-	0,94	0,025	0,97	41	-3	-8	✓	✓
4 // 4ESG/20Ar/b4ESG	100, 2KM	Low-Carbon iplus	Iso	1,1	-	0,94	-	-	39	-2	-7	×	✓
6 // 4ESG/20Ar/b4ESG	111, 2KM	Low-Carbon iplus	Iso	1,1	-	0,94	-	-	41	-2	-7	×	✓
4 // 6/8Ar/4/14Ar/b4	100, 33L	Low-Carbon iplus	Iso	1,0	-	0,92	-	-	42	-3	-8	×	✓
6 // 6/8Ar/4/14Ar/b4	111, 33L	Low-Carbon iplus	Iso	1,0	-	0,92	-	-	43	-4	-10	×	✓
4 // 3bESG/12Ar/3/14Ar/b4	100, 3AD	Low-Carbon iplus	Iso	0,7	-	0,92	-	-	40	-3	-8	×	✓
6 // 3bESG/12Ar/3/14Ar/b4	111, 3AD	Low-Carbon iplus	Iso	0,7	-	0,92	-	-	43	-2	-8	×	✓
4 // 4bESG/12Ar/4/12Ar/b4ESG	100, 3A2	Low-Carbon iplus	Iso	0,7	-	0,92	0,025	0,76	39	-3	-8	✓	✓
6 // 4bESG/12Ar/4/12Ar/b4ESG	111, 3A2	Low-Carbon iplus	Iso	0,7	-	0,92	-	-	42	-3	-8	×	✓
6 // 3bESG/8Ar/3/10Ar/b4	111, 3AF	Low-Carbon iplus	Iso	0,9	-	0,94	0,023	0,9	43	-2	-8	✓	✓
4 // 3bESG/8Ar/3/10Ar/b4	100, 3AF	Low-Carbon iplus	Iso	0,9	-	0,94	0,023	0,9	41	-2	-7	✓	✓
6 // 4bESG/8Kr/4/8Kr/b4	111, 3TV	Low-Carbon iplus	Iso	0,7	-	0,94	-	-	44	-3	-7	×	✓
4 // 4bESG/8Kr/4/8Kr/b4	100, 3TV	Low-Carbon iplus	Iso	0,7	-	0,93	0,029	0,77	40	-3	-8	✓	✓
6 // 4bESG/10Ar/3/12Ar/b33.2(VSG)	111, 3HP	Low-Carbon iplus	Iso	0,8	-	0,92	-	-	45	-2	-7	×	✓
6 // 6b/8Ar/4bESG/8Ar/44.6(VSG-S)	111, 37Q	Low-Carbon iplus	Iso	1,0	-	0,94	-	-	46	-2	-7	×	✓
4 // 6b/8Ar/4bESG/8Ar/44.6(VSG-S)	100, 37Q	Low-Carbon iplus	Iso	1,0	-	0,94	-	-	45	-1	-6	×	✓

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Internorm takes responsibility for the environment and climate

Internorm's use of low-carbon iplus glass saves 10,000 t of CO_2 eq annually

Glass is an fundamental component in window production. As Europe's leading window brand, we take our responsibility seriously, and incorporate low-carbon iplus insulating glazing in our product range as standard.

In order to reduce greenhouse gas emissions, we analysed the entire low-carbon float glass production chain. This included activities before, during and after the actual manufacturing process, right through to delivery to the customer.

The result is a 4 mm thick, low-carbon float glass with a reduced carbon footprint of 5.5 kg CO_2 eq/m^2 that delivers emission savings of over 45%.

What turns low-carbon iplus glass into thermally insulated glass?

- Use of low-emission raw materials
- Use of highly efficient melting furnaces including electric boosting
- At least 50% recycled content, to conserve valuable raw materials
- Utilisation of renewable energies
- Optimised transport throughout the entire supply chain

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