



WINDOWS

Highlights of Architecture
2015/16



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EUROPE'S NO. 1 WINDOW BRAND

WE ARE A STRONG FAMILY BUSINESS!





Internorm has been a family business for more than 80 years having developed from a one-man blacksmith's shop to the largest internationally active window brand.

During this time we have manufactured over 21 million window and door units, all 100% made in our production facilities in Traun, Sarleinsbach and Lannach. From the creation of the UPVC window and the production of timber/aluminium window to today's high tech and ultra-modern design innovations, our family company has been setting standards all over Europe. We are pioneers in our field and continue to further develop technology and innovative ideas.

Our staff, of over 1900 employees across Europe, are specialists who thrive on attention to detail and act with passion and integrity. Together with more than 1300 distribution partners in 21 countries we guarantee perfect product quality and the highest levels of service.

- ▲ Internorm manufacturing sites (production exclusively in Austria)
- Internorm offices
- Internorm distribution partners

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www.internorm.com



WE CAN OFFER YOU ...

HIGH-QUALITY WINDOWS AND EXCELLENT SERVICE

Individual windows

Each window is unique. Internorm windows are manufactured in our ultra-modern manufacturing plants to your precise specifications and custom-made exactly to your measurements. We produce a range of windows including UPVC, UPVC/aluminium and timber/aluminium with flush, square-edged, profiled or rounded styles. With a huge colour selection, numerous glazing and door handle options and large-scale glazing options we can offer unlimited design possibilities. You choose!

Innovative technologies

Utilising state of the art technologies, our in-house research department continually develop new products and technological innovations offering you even greater comfort and security.

Perfect combinability

Internorm windows can be combined perfectly with any other products from the Internorm range. Identical surface finishes, colours and glazing ensure continuity throughout the design of your home.

Excellent quality

Excellent thermal insulation coupled with the highest levels of security are a matter of course for Internorm windows. Our numerous national and international awards together with industry recognised certifications are proof that our continual product development guarantees exceptional quality products. We are therefore able to offer product warranties which surpass our customers expectations.

Competent advice

We are only satisfied when our customers are satisfied! Our Customer Care Program ensures reliable advice and care for you. Our 1300+ distribution partners, in 21 countries, guarantee this claim. Our distribution partners take an active interest in your individual requirements and will advise accordingly, taking accurate measurements and provide transparent pricing.

Expert installation

Each of our distribution partners are certified installation specialists providing clean, expert fitting whilst utilising state of the art techniques. Upon completion of fitting, all installed products will be checked for full functionality and provide valuable tips for maintenance and care.



TRAUN/UPPER AUSTRIA

Door production, UPVC window, insulating glass and aluminium production



SARLEINSBACH/UPPER AUSTRIA

UPVC window and insulating glass production, extrusion



LANNACH/STYRIA

Timber/aluminium production

DesignStyles

Highlights of architecture

We believe the architecture of a building reflects the people who live within it. Internorm connects people and buildings by offering individual living styles and by choosing Internorm windows and doors you can truly fulfil your desires in home living.

To help you find a window solution which meets your unique criteria for architecture, design and comfort alongside the many options in shape, colour and material, you can choose from the three different Internorm design styles: **studio**, **home** and **ambiente**.

We ask the question:

IN WHICH BUILDING DO YOU FEEL AT HOME?



studio

studio follows a very clear line in its design. This style with its cutting edge shapes and diminished appearance gives a contemporary and unconventional feel.

from page 14 onward



home

pure

home pure meets the demands for a modern and straight-lined style creating bright living environments.

from page 30 onward



soft

home soft feels friendly and cosy and offers many design varieties – from elegant to playful.

from page 48 onward



















ambiente

ambiente stands out with its traditional shapes – timeless classical and elegant. Its composition is elaborately designed and conveys a homely feel.

from page 62 onward



Styles/windows		UPVC		UPVC/aluminium
studio 		 <p>KF 220 ★★★★★ U_w up to 0.67 W/m²K</p>		 <p>KF 220 ★★★★★ U_w up to 0.67 W/m²K</p>  <p>KF 410 ★★★★★ U_w up to 0.62 W/m²K</p>  <p>KV 440 ★★★★★ U_w up to 0.64 W/m²K</p>
home pure 		 <p>KF 500 ★★★★★ U_w up to 0.61 W/m²K</p>  <p>KF 410 ★★★★★ U_w up to 0.62 W/m²K</p>		 <p>KF 500 ★★★★★ U_w up to 0.61 W/m²K</p>  <p>KF 410 ★★★★★ U_w up to 0.62 W/m²K</p>  <p>KF 200 ★★★★★ U_w up to 0.74 W/m²K</p>  <p>KV 240 ★★★★★ U_w up to 0.80 W/m²K</p>  <p>KV 440 ★★★★★ U_w up to 0.64 W/m²K</p>
home soft 		 <p>KF 410 ★★★★★ U_w up to 0.62 W/m²K</p>  <p>KF 200 ★★★★★ U_w up to 0.74 W/m²K</p>		 <p>KF 200 ★★★★★ U_w up to 0.74 W/m²K</p>  <p>KF 410 ★★★★★ U_w up to 0.62 W/m²K</p>  <p>KV 440 ★★★★★ U_w up to 0.64 W/m²K</p>
ambiente 		 <p>KF 410 ★★★★★ U_w up to 0.62 W/m²K</p>  <p>KF 200 ★★★★★ U_w up to 0.74 W/m²K</p>		 <p>KF 200 ★★★★★ U_w up to 0.74 W/m²K</p>  <p>KF 410 ★★★★★ U_w up to 0.62 W/m²K</p>  <p>KV 440 ★★★★★ U_w up to 0.64 W/m²K</p>

Styles/windows		Timber/aluminium	
<div>studio</div> 		<div>   </div> <div> HF 310 HV 350 </div> <div> ★★★★★ ★★★★★ </div> <div> U_w up to 0.62 W/m²K U_w up to 0.60 W/m²K </div>	
<div>home pure</div> 		<div>    </div> <div> HF 210 HF 310 HV 350 </div> <div> ★★★★★ ★★★★★ ★★★★★ </div> <div> U_w up to 0.67 W/m²K U_w up to 0.62 W/m²K U_w up to 0.60 W/m²K </div>	
<div>home soft</div> 		<div>    </div> <div> HF 210 HF 310 HV 350 </div> <div> ★★★★★ ★★★★★ ★★★★★ </div> <div> U_w up to 0.67 W/m²K U_w up to 0.62 W/m²K U_w up to 0.60 W/m²K </div>	
<div>ambiente</div> 		<div>    </div> <div> HF 210 HF 310 HV 350 </div> <div> ★★★★★ ★★★★★ ★★★★★ </div> <div> U_w up to 0.67 W/m²K U_w up to 0.62 W/m²K U_w up to 0.60 W/m²K </div>	





studio

IDEAL FOR THE INDIVIDUALIST

You see yourself as trendsetter and have a high affinity towards new technologies.

Trendsetting architecture, clear shapes and diminished appearance create an aesthetic living environment and reflect your individual living concept. Your minimalistic living style is reduced to the essentials and creates space for self-fulfillment. You possess a high living standard and like to express your individuality.

True to this philosophy Internorm's [studio](#) windows fit perfectly with your exquisite living style.

The mostly surface-flush window systems can be integrated completely into the brickwork and are available in the materials UPVC, UPVC/aluminium and timber/aluminium.

Enjoy interesting insights and views when browsing the [studio](#) style section!





VIEW FROM THE INSIDE

Square-edged or flush sashes of **studio** windows fit perfectly into the clear structures of your interior architecture. Straight-lined window handles with flat key hole cover plates emphasise the minimised appearance ideally. Fixed glazings as shown above, ensure almost frameless installations also on the inside.

SURFACES AND INTERIOR COLOURS

Choose between long-lasting UPVC and natural timber. The large colour range offers a multitude of design possibilities.



UPVC / TIMBER
white



TIMBER
in all RAL colours



TIMBER
in varnished and opaque
standard colours

VIEW FROM THE OUTSIDE

studio window KF 220 can be rendered into the wall thereby giving a fixed window a frameless appearance. The frame of the other **studio** windows can be integrated into the facade on three sides. Only the narrow window sash remains visible.

SURFACES AND EXTERIOR COLOURS

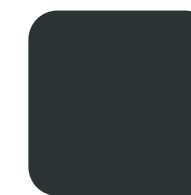
Choose between long-lasting UPVC and weather-resistant aluminium. Timber decor colours, metallic decor colours as well as stainless steel colours are offering a multitude of design possibilities.






UPVC
white



ALUMINIUM
Attachment clad in highly
weather-resistant colours



ALUMINIUM
Attachment clad in many RAL
colours

Material		Timber/aluminium		UPVC/aluminium			UPVC
							
		HF 310	HV 350				KF 220
Thermal insulation (in W/m²K)		★★★★★	★★★★★				★★★★★
Coating LIGHT/SOLAR+		U _w = 0.69 / 0.77	U _w = 0.95 / n.a.				U _w = 0.78 / 0.86
Best value		U _w = 0.62	U _w = 0.60				U _w = 0.67
Soundproofing (in dB)		★★★★★	★★★★★				★★★★★
		33 – 46	41 – 47				35 – 43
Security		★★★★★	★★★★★				★★★★★
		RC2	RC2				RC1, RC2
Locking		★★★★★	★★★★★				★★★★★
		concealed	concealed				concealed
Dimensions mm							
Frame construction depth		85	85				68
View width frame/sash		114	114				98
View width flying mullion (2 sashes)		134	134				100
View width transom (2 sashes)		173	173				154
Opening types							
Fixed		★	★				★
Turn and turn/tilt		★	★				★
Tilt		★	★				★
Sliding windows		★					★
Lockable doors		★					★
Sliding doors		★					★
Doors with low threshold		★	★				★
Outward opening doors							
Gaskets quantity		3	3				3
Bead gasket colour outside		black	black				black

Handles



Internorm offers a sophisticated selection of handles – here are a few recommendations from our range. A selection of designer handles are also available from your Internorm distribution partner!



Standard handle G80
with UPVC, UPVC/
aluminium and timber/
aluminium windows
flat key hole cover
plate
Part no. 36423

Standard handle G80
with UPVC and
UPVC/aluminium
window in flying
mullion version
Part no. 36404



Standard handle G80
lockable
Part no. 36400

Handle Dallas
Part no. 36426

Sun and insect protection



Sun and insect protection systems complement windows to a functional unit and support the design of the house facade.



Windows with integrated blinds



Venetian blinds
with and without light guidance



Exposed roller shutters



Insect protection

Windows with integrated blinds: Sun and privacy protection integrated between the panes, therefore protected – choose between blinds, Venetian blinds or Duette®.

Venetian blinds: Optimum control and guidance of light and warmth through adjustable slats; can be combined with insect protection.

Exposed roller shutters: Completely fitted to the window, can be combined with insect protection.

Insect protection: Fixed, turn, sliding or pull-down flyscreen. Can be combined with sun protection.

Colours



Here is a selection of colours as a recommendation, matching your studio window. The complete colour range can be found in the overview from page 106 onward.

Exterior colours	Interior colours
M916	White
HM113	RAL1013
HM735	FI916
EL01	FI500
EL02	FI501
HM906	FI504
HFM02	LA600
HFM03	FI509
HM716	RAL7040
	Dark grey

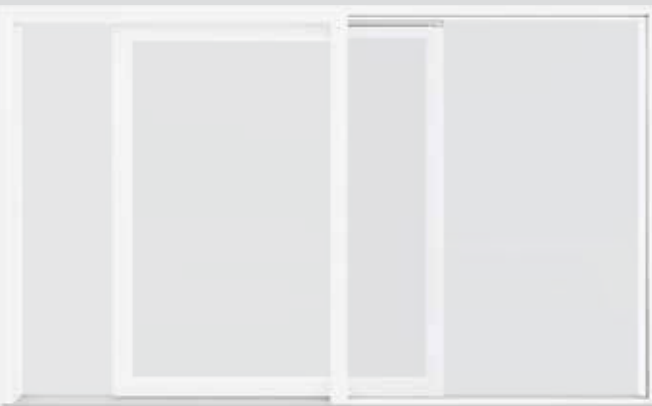
Large-scale elements



Modern glass architecture through large-scale glazing, fixed glazing and lift-sliding doors, which include corner solutions in all-glass versions and XL sizes up to 12 m wide and 17 m² glass area.



HX 300 Panorama



Lift-sliding door UPVC, UPVC/aluminium



Lift-sliding door timber/aluminium

KF 220

UPVC & UPVC/ALUMINIUM WINDOW

TECHNICAL DATA

Design Sash in Vetro design allows frameless architecture
Surface flush interior design
Glass sash – no difference in outside view between fixed and openable elements
Frameless glass architecture – window can be rendered on three sides

Thermal insulation Thermal insulation with standard triple glazing LIGHT
($U_g = 0.5 \text{ W/m}^2\text{K}$)
 $U_w = 0.74 \text{ W/m}^2\text{K}$
Best thermal insulation
 U_w up to $0.74 \text{ W/m}^2\text{K}$
(with corresponding glazing)

Sound insulation Soundproofing up to 43 dB
(with corresponding glazing)

System description 68/71 mm construction depth
FIX-O-ROUND Technology
Fully concealed hardware as standard
Standard security
Triple gasket system
Narrow view width up to 98 mm

I-tec



UPVC VERSION

Along with the aluminium attachment clad version in all colours, the classic UPVC version in white is also available.



SOPHISTICATED DESIGN

Outside Vetro design (small recess from frame to glass edge).



I-TEC GLAZING FIX-O-ROUND TECHNOLOGY

Continuous all around fixing of the glass pane ensures better stability, thermal and sound insulation, burglary protection and functioning security.

KF 410

UPVC/ALUMINIUM WINDOW

TECHNICAL DATA

Design Modern, square-edged outside and inside design
Frame and sash outside flush, three-sided integration into facade is possible
Can be perfectly combined with timber/aluminium windows due to same outside appearance

Thermal insulation Thermal insulation with standard triple glazing and highly insulating edge seal
($U_g = 0.5 \text{ W/m}^2\text{K}$; g value 52 %)
 $U_w = 0.72 \text{ W/m}^2\text{K}$
For best energy efficiency SOLAR+ glazing ($U_g = 0.6 \text{ W/m}^2\text{K}$; g value 64 %) $U_w = 0.79 \text{ W/m}^2\text{K}$

Sound insulation Soundproofing up to 45 dB
(with corresponding glazing)

System description 93 mm construction depth
FIX-O-ROUND Technology
Fully concealed hardware as standard
Standard security
Triple gasket system
5 chamber system with highly thermally insulating thermal foam (HCFC, HCF and FC free)
I-tec ventilation available upon request

I-tec



Passive house certified in its standard version



FLUSH DESIGN

The square-edged and straight-lined window sash ends flush towards the frame. The window can be rendered on three sides for modern glass architecture.



I-TEC GLAZING FIX-O-ROUND TECHNOLOGY

Continuous all around fixing of the glass pane ensures better stability, thermal and sound insulation, burglary protection and functioning security.



I-TEC VENTILATION

Individual control of fresh air for each room – no big loss of heat, no pollen, no outside noise, with increased security.

KV 440

UPVC/ALUMINIUM WINDOW WITH INTEGRATED BLIND

TECHNICAL DATA

Design Innovative window with integrated blind in attractive glass appearance

Square-edged, straight-lined inside design

Frame and sash flush outside, three-sided integration into facade is possible

Can be perfectly combined with timber/aluminium windows due to same outside appearance

Thermal insulation Thermal insulation with standard quadruple glazing
($U_g = 0.6 \text{ W/m}^2\text{K}$) $U_w = 0.78 \text{ W/m}^2\text{K}$

Best thermal insulation
 U_w up to $0.64 \text{ W/m}^2\text{K}$
(with corresponding glazing)

Sound protection Soundproofing up to 45 dB
(with corresponding glazing)

System description 93 mm construction depth

Sun and privacy protection integrated between the panes and therefore protected – available with I-tec shading upon request

FIX-O-ROUND Technology

Fully concealed hardware as standard

Standard security

Triple gasket system

Gasket colour outside black or light grey

Highly thermally insulating thermal foam (HCFC, HCF and FC free)

I-tec ventilation available upon request

I-tec



QUADRUPLE PROTECTION

Thermal, sound, sun and privacy protection all in one window. No additional structure provision is necessary. No extra fitting necessary for sun protection systems.



I-TEC SHADING

Available upon request with **photovoltaic blind**, Venetian blind or Duette®. Energy supply via integrated photovoltaic module, no extra fitting necessary, bi-directional wireless control.



MODERN GLASS APPEARANCE

With this innovative window with integrated blind in attractive glass appearance and modern square-edged frame design, integration into the facade is possible on three sides. Modern interior design with square-edged sash.

HV 350

TIMBER/ALUMINIUM WINDOW WITH INTEGRATED BLIND

TECHNICAL DATA

Design Innovative window with integrated blind in attractive glass appearance

Square-edged, straight-lined inside design

Frame and sash flush on the outside, three-sided integration into facade is possible

Can be perfectly combined with UPVC/aluminium windows due to same outside appearance

Thermal insulation Thermal insulation with standard triple glazing
($U_g = 0.90 \text{ W/m}^2\text{K}$) $U_w = 0.95 \text{ W/m}^2\text{K}$

Best thermal insulation at low weight U_w up to $0.60 \text{ W/m}^2\text{K}$
(with 3LIGHT glazing) – suited for passive houses acc. to TU Graz

Sound insulation Soundproofing up to 47 dB
(with corresponding glazing)

System description 85 mm construction depth

Sun and privacy protection integrated between the panes and therefore protected – available with I-tec shading upon request

FIX-O-ROUND Technology

Fully concealed hardware

Standard security

Triple gasket system

Highly thermally insulating thermal foam (HCFC, HCF and FC free)

Upon request available with quadruple glazing – suited for passive houses acc. to TU Graz

I-tec



MODERN GLASS APPEARANCE

With this innovative window with integrated blind in attractive glass appearance and modern square-edged frame design integration into the facade is possible on three sides. Modern interior design with square-edged sash.



I-TEC SHADING

Available upon request with **photovoltaic blind**, Venetian blind or Duette®. Energy supply via integrated photovoltaic module, no extra fitting necessary, bi-directional wireless control.



OPTIMUM DIMMING

The aluminium coated double Venetian blind (Duette®) ensures additional thermal insulation and excellent dimming (similar to the roller shutter)..

HF 310 TIMBER/ALUMINIUM WINDOW

TECHNICAL DATA

Design Modern, square-edged design outside and inside
Frame and sash flush on the outside, three-sided integration into facade is possible
Can be perfectly combined with UPVC/aluminium windows due to same outside appearance

Thermal insulation Thermal insulation with standard triple glazing and highly insulating edge seal ($U_g = 0.5 \text{ W/m}^2\text{K}$)
 $U_w = 0.69 \text{ W/m}^2\text{K}$
For best energy efficiency SOLAR+ glazing with $U_g = 0.6 \text{ W/m}^2\text{K}$; g value 64 %

Sound insulation Soundproofing up to 46 dB

System description 85 mm construction depth
FIX-O-ROUND Technology
Fully concealed hardware
Standard security
Highly thermally insulating thermal foam (HCFC, HCF and FC free)
Triple gasket system

I-tec

I-tec Glazing

FIX-O-ROUND[®] Technology



In the standard version suited for passive houses



INGENIOUS GLAZING SYSTEM

Glass panes glued to the timber frame ensure good structural stability and high torsion resistance.



FLUSH DESIGN

The square-edged and straight-lined window sash ends flush towards the frame. The window can be rendered on three sides for modern glass architecture.



TRIPLE GASKET SYSTEM

Three continuous gasket levels without interruption protect the inside from moisture and additionally improve thermal and sound insulation.



home

The **home** design style features a harmonic, pleasant atmosphere with aesthetic and living comfort. A beautiful living space, created exactly according to your wishes and ideas, forms the centre of your life and provides a place of retreat from everyday pressures.

Your life style is characterised by a high quality and design awareness. Internorm **home** windows certainly live up to this claim – they represent better quality of life and living comfort.

home windows are a skillful combination of modern age and tradition:

home pure



home pure meets the demands of a modern and straight-lined style designing bright, light-flooded living environments for you where you can realise your true self and create freedom for you and your family.

home soft



home soft feels friendly and cosy, it offers many design varieties – from elegant to playful. An almost countless selection of window shapes – round, segmented, basket or pointed arch – Georgian/feature bars in many versions and further design elements like colours, handles, etc. all add a harmonic style to your home.



home pure



home soft



home pure

IDEAL FOR THE PURIST

Good taste and a touch for style is of great importance to you. You appreciate particularly the out-of-the-ordinary and value puristic aesthetic. Bright, light-flooded rooms create freedom for you and your family. Straight-lined, square-edged shapes underline the architecture of your building. Your living style is characterized by your high quality and design awareness.

Your good taste is also reflected in your windows. The square-edged, straight-lined window systems adapt perfectly to your puristic living style and are available in the materials UPVC, UPVC/aluminium and timber/aluminium.

Enjoy interesting insights and views while exploring the [home pure](#) style section!





VIEW FROM THE INSIDE

The square-edged sashes of **home pure** windows fit perfectly into the puristic appearance of its rooms. Simple handles emphasise the minimised architecture. The straight-lined style of its living spaces runs like a red thread through the building.



SURFACES AND INTERIOR COLOURS

Choose between long-lasting UPVC and natural timber. The large colour range offers a multitude of design possibilities.



UPVC / TIMBER
white



TIMBER
in all RAL colours



TIMBER
in varnished and opaque
standard colours



VIEW FROM THE OUTSIDE

home pure windows underline the clear lines of its outside facade. The modern sashes and frames create corners and edges and perfect their straight-lined architecture. **home pure** windows can be rendered partly on three sides into the brickwork.



SURFACES AND EXTERIOR COLOURS

Choose between long-lasting UPVC and weather-resistant aluminium. Timber decor colours, metallic decor colours and stainless steel colours offer a multitude of design possibilities.














UPVC
white



ALUMINIUM
Attachment clad in highly
weather-resistant colours



ALUMINIUM
Attachment clad in many RAL
colours

Material		UPVC			UPVC/aluminium				
									
		KF 500	KF 410		KF 500	KF 410	KF 200	KV 240	KV 440
Thermal insulation (in W/m²K)		★★★★★ U _w = 0.69 / 0.76	★★★★★ U _w = 0.72 / 0.79		★★★★★ U _w = 0.69 / 0.76	★★★★★ U _w = 0.72 / 0.79	★★★★★ U _w = 0.88 / 0.95	★★★★★ U _w = 1.1 / -	★★★★★ U _w = 0.77 / 0.84
Coating LIGHT/SOLAR+									
Best value		U _w = 0.61	U _w = 0.62		U _w = 0.61	U _w = 0.62	U _w = 0.74	U _w = 0.80	U _w = 0.64
Soundproofing (in dB)		★★★★★ 35 – 46	★★★★★ 34 – 45		★★★★★ 35 – 46	★★★★★ 34 – 45	★★★★★ 33 – 45	★★★★★ 39 – 45	★★★★★ 39 – 45
Security		★★★★★ RC2	★★★★★ RC1, RC2		★★★★★ RC2	★★★★★ RC1, RC2	★★★★★ RC1, RC2	★★★★★ RC1, RC2	★★★★★ RC1, RC2
Locking		★★★★★ fully integrated	★★★★★ concealed		★★★★★ fully integrated	★★★★★ concealed	★★★★ exposed	★★★★ exposed	★★★★ concealed
Dimensions mm									
Frame construction depth		90	90		93	93	71	71	93
View width frame/sash		80	113		80	113	97	102	118
View width flying mullion (2 sashes)		117	133		117	133	119	130	144
View width transom (2 sashes)		139	187		139	187	170	181	198
Opening types									
Fixed		★	★		★	★	★	★	★
Turn and turn/tilt		★	★		★	★	★	★	★
Tilt		★	★		★	★	★	★	★
Sliding windows		★	★		★	★	★		
Lockable doors			★			★	★		
Sliding doors		★	★		★	★	★		
Doors with low threshold		★	★		★	★	★	★	★
Outward opening doors			★			★			
Gaskets quantity		3	3		3	3	3	3	3
Bead gasket colour outside		light grey	light grey		black	black	black	black	black

Material		Timber/aluminium		
				
		HF 210	HF 310	HV 350
Thermal insulation (in W/m²K) Coating LIGHT/SOLAR+ Best value		★★★★★ U _w = 0.90 / 0.96 U _w = 0.67	★★★★★ U _w = 0.69 / 0.77 U _w = 0.62	★★★★★ U _w = 0.96 / n.a. U _w = 0.60
Soundproofing (in dB)		★★★★★ 33 – 46	★★★★★ 33 – 46	★★★★★ 41 – 47
Security		★★★★★ RC2	★★★★★ RC2	★★★★★ RC2
Locking		★★★★★ concealed	★★★★★ concealed	★★★★★ concealed
Dimensions mm				
Frame construction depth		85	85	85
View width frame/sash		114	114	114
View width flying mullion (2 sashes)		134	134	134
View width transom (2 sashes)		173	173	173
Opening types				
Fixed		★	★	★
Turn and turn/tilt		★	★	★
Tilt		★	★	★
Sliding windows		★	★	
Lockable doors		★	★	
Sliding doors		★	★	
Doors with low threshold		★	★	★
Outward opening doors				
Gaskets quantity		3	3	3
Bead gasket colour outside		black	black	black



Handles



Internorm offers a sophisticated selection of handles – here are a few recommendations from our range. A selection of designer handles are also available from your Internorm distribution partner!



Standard handle
G80
Part no. 36404



Standard handle
G80
lockable
Part no. 36400



Secustik handle
G80
Part no. 34139
(only for KF 500)



Handle Amsterdam
Part no. 36416



Handle Dallas
Part no. 36426

Sun and insect protection



The sun and insect protection systems complement the windows to a functional unit and support the design of the house facade.



Windows with
integrated blinds



Venetian blinds
with and without light guidance



Exposed roller shutters



Insect protection

Windows with integrated blinds: Sun and privacy protection integrated between the panes, therefore protected – choose between blinds, Venetian blinds or Duette®.

Venetian blinds: Optimum control and guidance of light and warmth through adjustable slats, can be combined with insect protection.

Exposed roller shutters: Completely fitted onto the window, can be combined with insect protection.

Insect protection: Fixed, turn, sliding or pull-down flyscreen. Can be combined with sun protection.

Colours



Here is a selection of colours as a recommendation, matching your home pure windows. The complete colour range can be found in the overview from page 106 onward.

Exterior colours	Interior colours
 M916	 White
 HM113	 RAL1013
 HM735	 FI916
 EL01	 FI501
 EL02	 FI503
 HM906	 FI505
 HFM02	 FI502
 HFM03	 LA602
 HM716	 RAL7040
 HM817	 Dark grey

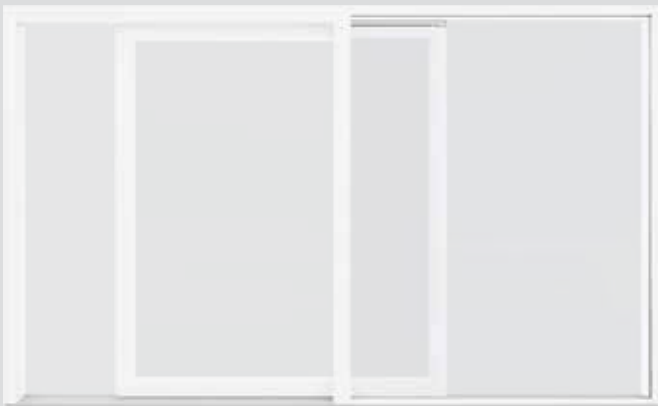
Large-scale elements



Modern glass architecture through large-scale glazings, fixed glazings and lift-sliding doors, also with corner solutions in all-glass versions, XL sizes up to 12 m wide and 17 m² glass area.



HX 300 Panorama



Lift-sliding door UPVC, UPVC/aluminium



Lift-sliding door timber/aluminium

KF 500

UPVC &
UPVC/ALUMINIUM WINDOWS

TECHNICAL DATA

Design Modern, square-edged design outside and inside

Frame outside with stylised sash

Window sash in perfect glass appearance

Thermal insulation Thermal insulation with standard triple glazing and highly insulating edge seal ($U_g = 0.5 \text{ W/m}^2\text{K}$)
 $U_w = 0.69 \text{ W/m}^2\text{K}$

For best energy efficiency SOLAR+ glazing ($U_g = 0.6 \text{ W/m}^2\text{K}$; g value 64 %) $U_w = 0.76 \text{ W/m}^2\text{K}$

Sound insulation Soundproofing up to 46 dB (with corresponding glazing)

System description 90/93 mm construction depth

FIX-O-ROUND Technology

Revolutionary I-tec locking as standard, this means fully integrated concealed hardware

Secustik handle as standard

RC2N standard (without lockable handle) according to EN 1627–1630

Triple gasket system

Multi chamber system with additional highly thermally insulating thermal foam (HCFC, HCF and FC free)

More light through narrow view widths up to 80 mm

I-tec ventilation available upon request

I-tec

I-tec Locking**I-tec Ventilation****I-tec Glazing**

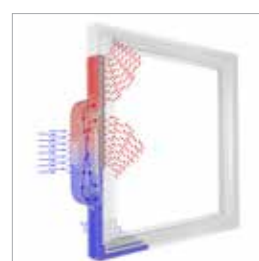
UPVC VERSION

Along with the aluminium attachment clad version in all colours, the classic UPVC version in white is also available.



I-TEC LOCKING

Integrated flaps ensure maximum burglary protection already in the standard version (security class RC2N). When locking, all sides are pressed towards the inside of the frame. Levering of windows becomes impossible.



I-TEC VENTILATION

Individual control of fresh air for each room – no big heat loss, no pollen, no outside noise, with increased security.

KF 410

UPVC &
UPVC/ALUMINIUM WINDOWS

TECHNICAL DATA

Design Modern, square-edged design outside and inside

Can be perfectly combined with timber/aluminium windows due to same outside appearance

Thermal insulation Thermal insulation with standard triple glazing and highly insulating edge seal ($U_g = 0.5 \text{ W/m}^2\text{K}$)
 $U_w = 0.72 \text{ W/m}^2\text{K}$

For best energy efficiency SOLAR+ glazing ($U_g = 0.6 \text{ W/m}^2\text{K}$; g value 64 %) $U_w = 0.79 \text{ W/m}^2\text{K}$

Sound insulation Soundproofing up to 45 dB (with corresponding glazing)

System description 90/93 mm construction depth

FIX-O-ROUND Technology

Fully concealed hardware as standard

Standard security

Triple gasket system

5 chamber system with highly thermally insulating thermal foam (HCFC, HCF and FC free)

I-tec ventilation available upon request

I-tec

I-tec Glazing**I-tec Ventilation**

Passive house certified in the standard version



UPVC VERSION

Along with the aluminium attachment clad version in all colours, the classic UPVC version in white is also available.



I-TEC GLAZING FIX-O-ROUND TECHNOLOGY

Continuous all around fixing of the glass pane ensures better stability, thermal and sound insulation, burglary protection and functioning security.



I-TEC VENTILATION

Individual control of fresh air for each room – no big heat loss, no pollen, no outside noise, with increased security.

KF 200

UPVC & UPVC/ALUMINIUM WINDOWS

TECHNICAL DATA

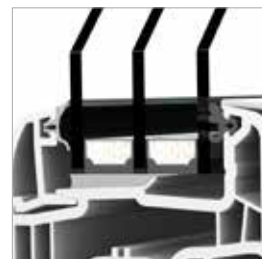
Design	Modern, square-edged design outside and inside Can be perfectly combined with timber/aluminium windows due to similar outside appearance
Thermal insulation	Thermal insulation with standard triple glazing LIGHT ($U_g = 0.6 \text{ W/m}^2\text{K}$, g value 52 %) $U_w = 0.96 \text{ W/m}^2\text{K}$ Best thermal insulation U_w up to $0.74 \text{ W/m}^2\text{K}$ (with corresponding glazing)
Sound insulation	Soundproofing up to 45 dB (with corresponding glazing)
System description	68/71 mm construction depth FIX-O-ROUND Technology Fully concealed hardware available upon request Standard security Resistance class RC1 and RC2 tested (upon request) Triple gasket system 5 chamber system Locking parts screwed into steel – from a certain window size on Narrow view width up to 97 mm

I-tec



TRIPLE GASKET SYSTEM

Three continuous gasket levels without interruption ensure high tightness.



I-TEC GLAZING FIX-O-ROUND TECHNOLOGY

Continuous all around fixing of the glass pane ensures better stability, thermal and sound insulation, burglary protection and functioning security.



SQUARE-EDGED EXTERIOR DESIGN

This design in square-edged version is available exclusively with an aluminium clad.

KV 240

UPVC/ALUMINIUM WINDOW WITH INTEGRATED BLIND

TECHNICAL DATA

Design	Innovative window with integrated blind in modern square-edged design outside and inside Frame and sash flush on the outside, three-sided integration into facade is possible Can be perfectly combined with timber/aluminium windows due to same outside appearance
Thermal insulation	Thermal insulation with standard triple glazing ($U_g = 0.95 \text{ W/m}^2\text{K}$) $U_w = 1.1 \text{ W/m}^2\text{K}$ Best thermal insulation at low weight U_w up to $0.80 \text{ W/m}^2\text{K}$ (with 3LIGHT glazing)
Sound insulation	Soundproofing up to 45 dB (with corresponding glazing)
System description	71 mm construction depth Sun and privacy protection integrated between the panes and therefore protected – available with I-tec shading upon request FIX-O-ROUND Technology Fully concealed hardware available upon request Triple gasket system 5-chamber system Narrow view width up to 102 mm I-tec ventilation available upon request

I-tec



QUADRUPLE PROTECTION

Thermal, sound, sun and privacy protection all in one window. No additional structural provision necessary. No extra fitting necessary for sun protection systems.



FLUSH DESIGN

With this innovative window with integrated blind in modern square-edged design, integration into the facade is possible on three sides. Inside with square-edged glazing bead.



I-TEC SHADING

Available upon request with photovoltaic blind, Venetian blind or Duette®. Energy supply via integrated photovoltaic module, no extra fitting necessary, bi-directional wireless control.

KV 440

UPVC/ALUMINIUM WINDOW WITH INTEGRATED BLIND

TECHNICAL DATA

Design Innovative window with integrated blind in modern square-edged design outside and inside

Frame and sash flush on the outside, three-sided integration into facade is possible

Can be perfectly combined with timber/aluminium windows due to same outside appearance

Thermal insulation Thermal insulation with standard quadruple glazing ($U_g = 0.6 \text{ W/m}^2\text{K}$)
 $U_w = 0.77 \text{ W/m}^2\text{K}$

Best thermal insulation
 U_w up to $0.64 \text{ W/m}^2\text{K}$
(with corresponding glazing)

Sound insulation Soundproofing up to 45 dB
(with corresponding glazing)

System description 93 mm construction depth

Sun and privacy protection integrated between the panes and therefore protected – available with I-tec shading upon request

FIX-O-ROUND Technology

Fully concealed hardware as standard

Standard security

Triple gasket system

Gasket colour outside black or light grey

Highly thermally insulating thermal foam (HCFC, HCF and FC free)

I-tec ventilation available upon request

I-tec

I-tec Glazing



I-tec Shading

I-tec Ventilation



QUADRUPLE PROTECTION

Thermal, sound, sun and privacy protection all in one window. No additional structure provision is necessary. No extra fitting necessary for sun protection systems.



FLUSH DESIGN

Three-sided integration into the facade is possible with this innovative window with integrated blind in modern square-edged design.



I-TEC SHADING

Available upon request with **photovoltaic blind**, Venetian blind or Duette®. Energy supply via integrated photovoltaic module, no extra fitting necessary, bi-directional wireless control.

HV 350

TIMBER/ALUMINIUM WINDOW WITH INTEGRATED BLIND

TECHNICAL DATA

Design Innovative window with integrated blind in attractive glass appearance

Square-edged, straight-lined inside design

Frame and sash flush on the outside, three-sided integration into facade is possible

Can be perfectly combined with UPVC/aluminium windows due to same outside appearance

Thermal insulation Thermal insulation with standard triple glazing ($U_g = 0.90 \text{ W/m}^2\text{K}$)
 $U_w = 0.95 \text{ W/m}^2\text{K}$

Best thermal insulation at low weight U_w up to $0.60 \text{ W/m}^2\text{K}$
(with 3LIGHT glazing) – suited for passive houses acc. to TU Graz

Sound insulation Soundproofing up to 47 dB
(with corresponding glazing)

System description 85 mm construction depth

Sun and privacy protection integrated between the panes and therefore protected - available with I-tec shading upon request

FIX-O-ROUND Technology

Fully concealed hardware

Standard security

Triple gasket system

Highly thermally insulating thermal foam (HCFC, HCF and FC free)

Quadruple glazing available upon request – suited for passive houses acc. to TU Graz

I-tec

I-tec Glazing



I-tec Shading



MODERN GLASS APPEARANCE

With this innovative window with integrated blind in attractive glass appearance and modern square-edged frame design integration into the facade is possible on three sides. Modern interior design with square-edged sash.



INGENIOUS GLAZING SYSTEM

Glass panes glued to the timber frame ensure good structural stability and high torsion resistance.



I-TEC SHADING

Available upon request with **photovoltaic blind**, Venetian blind or Duette®. Energy supply via integrated photovoltaic module, no extra fitting necessary, bi-directional wireless control.

HF 210

TIMBER/ALUMINIUM WINDOW

TECHNICAL DATA

Design Modern, square-edged design outside and inside

Can be perfectly combined with UPVC/aluminium windows due to same outside appearance

Thermal insulation Thermal insulation with standard triple glazing and aluminium spacer ($U_g = 0.7 \text{ W/m}^2\text{K}$) $U_w = 0.98 \text{ W/m}^2\text{K}$

Also available with 48 mm glazing ($U_g = 0.5 \text{ W/m}^2\text{K}$ without krypton) at best price/service ratio

For best energy efficiency SOLAR+ glazing with $U_g = 0.6 \text{ W/m}^2\text{K}$; g value 64 %

Sound insulation Soundproofing up to 46 dB (with corresponding glazing)

System description 85 mm construction depth

FIX-O-ROUND Technology

Fully concealed hardware

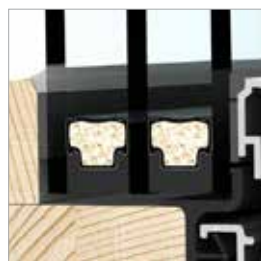
Standard security

Resistance class up to RC2

Triple gasket system

Highly thermally insulating thermal foam (HCFC, HCF and FC free)

I-tec **I-tec Glazing** **FIX-O-ROUND** Technology



INGENIOUS GLAZING SYSTEM

Glass panes glued to the timber frame ensure good structural stability and high torsion resistance.



FULLY CONCEALED HARDWARE

No visible hardware parts as standard for better appearance, easier cleaning, but most of all for better air tightness from the inside.



STRAIGHT-LINED DESIGN

Sash and frame create corners and edges on the outside facade and thus underline the clear lines of the home pure design style.

HF 310

TIMBER/ALUMINIUM WINDOW

TECHNICAL DATA

Design Modern, square-edged design outside and inside

Can be perfectly combined with UPVC/aluminium windows due to same outside appearance

Thermal insulation Thermal insulation with standard triple glazing and highly thermally insulating edge seal ($U_g = 0.5 \text{ W/m}^2\text{K}$) $U_w = 0.69 \text{ W/m}^2\text{K}$

Best thermal insulation U_w up to $0.62 \text{ W/m}^2\text{K}$ (with corresponding glazing)

Sound insulation Soundproofing up to 46 dB

System description 85 mm construction depth

FIX-O-ROUND Technology

Fully concealed hardware

Standard security

Triple gasket system

Highly thermally insulating thermal foam (HCFC, HCF and FC free)

I-tec **I-tec Glazing** **FIX-O-ROUND** Technology



In the standard version suited for passive houses



INGENIOUS GLAZING SYSTEM

Glass panes glued to the timber frame ensure good structural stability and high torsion resistance.



TRIPLE GASKET SYSTEM

Three continuous gasket levels without interruption protect the inside from moisture and additionally improve thermal and sound insulation.



MODERN INTERIOR DESIGN

The square-edged sashes perfectly fit into the straight-lined style of your interior architecture.



home soft

IDEAL FOR THE PASSIONATE

Your home radiates harmony and coziness. With the aid of numerous different design elements you create a homely, pleasant living atmosphere. You place great importance on good life quality, homely living comfort and see your own home as a place of retreat from everyday pressures.

The soft-line design of **home soft** windows fulfils your demands for a harmonic home perfectly. The rounded edges of window frames and sashes can be integrated anywhere and are available in the materials UPVC, UPVC/aluminium and timber/aluminium.

Enjoy interesting insights and views under the **home soft** style section!





VIEW FROM THE INSIDE

Harmony and aesthetics in symmetry – created by the round edges of glazing beads and window sashes of home soft windows. Attractive handles with rounded edges underline the pleasant living atmosphere.

SURFACES AND INTERIOR COLOURS

Choose between long-lasting UPVC and natural timber. The large colour range offers you a multitude of design possibilities.



UPVC / TIMBER
white



UPVC DECOR
Decor foils for UPVC surfaces
in different colours



TIMBER
in all RAL colours as well as varnished
and opaque standard colours



VIEW FROM THE OUTSIDE

Frames and sashes of home soft windows are surface offset and create a cosy exterior design with rounded edges. Further highlights include integrated or attached Georgian/feature bars. Windows with integrated sun and privacy protection are completed surface flush and can be integrated on three sides into the facade.

SURFACES AND EXTERIOR COLOURS

Choose between long-lasting UPVC and weather-resistant aluminium. Timber decor colours, metallic decor colours and stainless steel colours offer a multitude of design possibilities.








UPVC
white



ALUMINIUM
Attachment clad in many
colours



ALUMINIUM
Attachment clad in structured
timber decor colours

Material		Timber/aluminium			UPVC/aluminium			UPVC	
									
		HF 210	HF 310	HV 350				KF 410	KF 200
Thermal insulation (in W/m²K)		★★★★★	★★★★★	★★★★★				★★★★★	★★★★★
Coating LIGHT/SOLAR+		★★★★★	★★★★★	★★★★★				★★★★★	★★★★★
Best value		★★★★★	★★★★★	★★★★★				★★★★★	★★★★★
Soundproofing (in dB)		★★★★★	★★★★★	★★★★★				★★★★★	★★★★★
Security		★★★★★	★★★★★	★★★★★				★★★★★	★★★★★
Locking		★★★★★	★★★★★	★★★★★				★★★★★	★★★★★
Dimensions mm									
Frame construction depth		85	85	85				90	68
View width frame/sash		114	114	114				113	112.5
View width flying mullion (2 sashes)		134	134	134				133	119
View width transom (2 sashes)		173	173	173				187	170
Opening types									
Fixed		★	★	★				★	★
Turn and turn/tilt		★	★	★				★	★
Tilt		★	★	★				★	★
Sliding windows		★	★					★	★
Lockable doors		★	★					★	★
Sliding doors		★	★					★	★
Doors with low threshold		★	★	★				★	★
Outward opening doors								★	
Gaskets quantity		3	3	3				3	3
Bead gasket colour outside		black	black	black				light grey	light grey
Georgian bars		★	★	★				★	★

Handles



Internorm offers a sophisticated selection of handles – here are a few recommendations from our range. More attractive handles are available from your Internorm distribution partner!



Standard handle aluminium natural
Part no. 33899

Designer handle steel
Part no. 34615



Designer handle Athinal chrome/stainless steel matt
Part no. 34596

Designer handle Bruxelles chrome satined
Part no. 34592



Designer handle Amsterdam
Part no. 36416

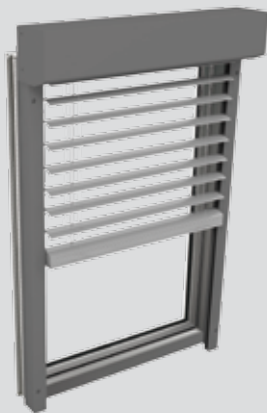
Sun and insect protection



The sun and insect protection systems complement the windows to a functional unit and support the design of the house facade.



Windows with integrated blinds



Venetian blinds with and without light guidance



Exposed roller shutters



Insect protection

Windows with integrated blinds: Sun and privacy protection integrated between the panes, therefore protected – choose between blinds, Venetian blinds or Duette®

Attachment Venetian blinds: Optimum control and guidance of light and warmth through adjustable slats, can be combined with insect protection

Exposed and mini exposed roller shutters: Completely fitted on to the window, can be combined with insect protection

Insect protection: Fixed, turn, sliding or pull-down flyscreen. Can be combined with sun protection.

Colours



Here is a selection of colours as a recommendation, matching your home soft windows. The complete colour range can be found in the overview from page 106 onward.

Exterior colours	Interior colours
M916	White
HM735	FI916
HFM02	FI501
HM304	FI502
HM605	LA600
HM803	LA601
HDH14 Light brown	FI506
HDS03	FI508
HDS07	Oregon decor
HFM21	Golden oak

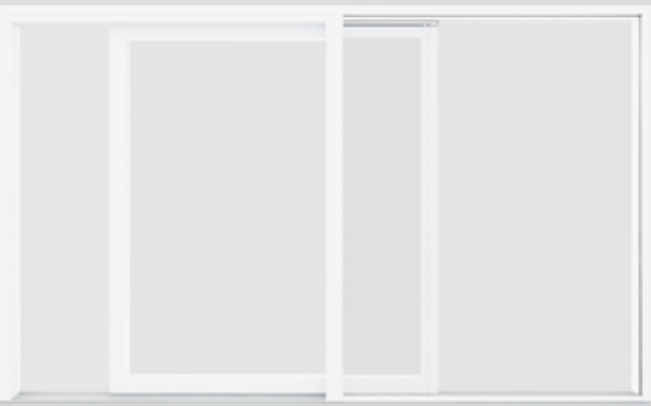
Large-scale elements



More light through large-scale glazing and lift-sliding doors, also with corner solutions in all-glass version, XL sizes up to 12 m wide and 17 m² glass area.



Sliding door UPVC, UPVC/aluminium



Lift-sliding door UPVC, UPVC/aluminium



Lift-sliding door timber/aluminium

KF 410

UPVC & UPVC/ALUMINIUM WINDOWS

TECHNICAL DATA

Design Classic rounded design outside and inside

Can be perfectly combined with timber/aluminium windows due to same outside appearance

Thermal insulation Thermal insulation with standard triple glazing and highly insulating edge seal ($U_g = 0.5 \text{ W/m}^2\text{K}$)
 $U_w = 0.72 \text{ W/m}^2\text{K}$

For best energy efficiency SOLAR+ glazing ($U_g = 0.6 \text{ W/m}^2\text{K}$; g value 64 %) $U_w = 0.79 \text{ W/m}^2\text{K}$

Sound insulation Soundproofing up to 45 dB (with corresponding glazing)

System description 90/93 mm construction depth

FIX-O-ROUND Technology

Fully concealed hardware

Standard security

Triple gasket system

5 chamber system with highly thermally insulating thermal foam (HCFC, HCF and FC free)

I-tec ventilation available upon request

I-tec **I-tec Glazing** **FIX-O-ROUND** Technology
I-tec Ventilation



Passive house certified in the standard version



UPVC VERSION

Along with the aluminium attachment clad version in all colours, the classic UPVC version in white is also available. Gaskets of the UPVC version are light grey as standard.



I-TEC GLAZING FIX-O-ROUND TECHNOLOGY

Continuous all around fixing of the glass pane ensures better stability, thermal and sound insulation, burglary protection and functioning security.



I-TEC VENTILATION

Individual control of fresh air for each room – no big heat loss, no pollen, no outside noise, with increased security.

KF 200

UPVC & UPVC/ALUMINIUM WINDOWS

TECHNICAL DATA

Design Classic rounded design outside and inside

Can be perfectly combined with timber/aluminium windows due to similar outside appearance

Also available in the classic UPVC version white

Thermal insulation Thermal insulation with standard triple glazing LIGHT ($U_g = 0.6 \text{ W/m}^2\text{K}$, g value 52 %)
 $U_w = 0.96 \text{ W/m}^2\text{K}$

Best thermal insulation
 U_w up to $0.74 \text{ W/m}^2\text{K}$ (with corresponding glazing)

Sound insulation Soundproofing up to 45 dB (with corresponding glazing)

System description 68/71 mm construction depth

FIX-O-ROUND Technology

Fully concealed hardware available upon request

Standard security

Resistance class RC1 and RC2 tested (upon request)

Triple gasket system

5 chamber system

Locking parts screwed into steel – from a certain window size on

Narrow view width up to 97 mm

I-tec **I-tec Glazing** **FIX-O-ROUND** Technology



UPVC VERSION

Along with the aluminium attachment clad version in all colours, the classic UPVC version in white is also available. Gaskets of the UPVC version are light grey as standard.



I-TEC GLAZING FIX-O-ROUND TECHNOLOGY

Continuous all around fixing of the glass pane ensures better stability, thermal and sound insulation, burglary protection and functioning security.



TRIPLE GASKET SYSTEM

Three continuous gasket levels without interruption ensure high tightness.

KV 440

UPVC/ALUMINIUM WINDOW WITH INTEGRATED BLIND

TECHNICAL DATA

Design Innovative window with integrated blind in classic rounded design outside and inside

Frame and sash flush on the outside, three-sided integration into facade is possible

Can be perfectly combined with timber/aluminium windows due to same outside appearance

Thermal insulation Thermal insulation with standard quadruple glazing ($U_g = 0.6 \text{ W/m}^2\text{K}$)
 $U_w = 0.77 \text{ W/m}^2\text{K}$

Best thermal insulation
 U_w up to $0.64 \text{ W/m}^2\text{K}$
(with corresponding glazing)

Sound insulation Soundproofing up to 45 dB
(with corresponding glazing)

System description 93 mm construction depth

Sun and privacy protection between the panes, therefore protected; I-tec shading available upon request

FIX-O-ROUND Technology

Fully concealed hardware

Standard security

Triple gasket system

Gasket colour outside black or light grey

5 chamber system with highly thermally insulating thermal foam (HCFC, HCF and FC free)

I-tec ventilation available upon request

I-tec

I-tec Glazing

I-tec Shading

I-tec Ventilation



QUADRUPLE PROTECTION

Thermal, sound, sun and privacy protection all in one window. No additional structure provision is necessary. No extra fitting necessary for sun protection systems.



FLUSH DESIGN

The rounded window sash ends flush towards the frame and can be rendered into the wall on three sides.



I-TEC SHADING

Available upon request with **photovoltaic blind**, Venetian blind or Duette®. Energy supply via integrated photovoltaic module, no extra fitting necessary, bi-directional wireless control.

HF 210

TIMBER/ALUMINIUM WINDOW

TECHNICAL DATA

Design Classic rounded design outside and inside

Can be perfectly combined with UPVC/aluminium windows due to same outside appearance

Thermal insulation Thermal insulation with standard triple glazing with aluminium spacer ($U_g = 0.7 \text{ W/m}^2\text{K}$)
 $U_w = 0.98 \text{ W/m}^2\text{K}$

Also available with 48 mm glazing ($U_g = 0.5 \text{ W/m}^2\text{K}$ without krypton) at best price/service ratio

For best energy efficiency SOLAR+ glazing with $U_g = 0.6 \text{ W/m}^2\text{K}$; g value 64 %

Sound insulation Soundproofing up to 46 dB
(with corresponding glazing)

System description 85 mm construction depth

FIX-O-ROUND Technology

Fully concealed hardware

Standard security

Resistance class up to RC2

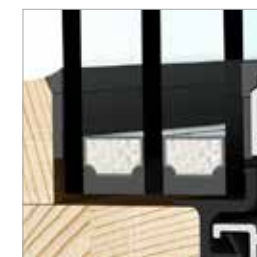
Triple gasket system

Highly thermally insulating thermal foam (HCFC, HCF and FC free)

I-tec

I-tec Glazing

FIX-O-ROUND Technology



INGENIOUS GLAZING SYSTEM

Glass panes glued to the timber frame ensure good structural stability and high torsion resistance.



FULLY CONCEALED HARDWARE

No visible hardware parts as standard for better appearance, easier cleaning, but most of all for better air tightness from the inside.



HARMONIC DESIGN

The rounded edges of window sash and frame create a homely, pleasant living atmosphere.

HF 310

TIMBER/ALUMINIUM WINDOW

TECHNICAL DATA

Design Classic rounded design outside and inside

Can be perfectly combined with UPVC/aluminium windows due to same outside appearance

Thermal insulation Thermal insulation with standard triple glazing and highly thermally insulating edge seal ($U_g = 0.5 \text{ W/m}^2\text{K}$) $U_w = 0.69 \text{ W/m}^2\text{K}$

Best thermal insulation U_w up to $0.62 \text{ W/m}^2\text{K}$ (with corresponding glazing)

Sound insulation Soundproofing up to 46 dB

System description 85 mm construction depth

FIX-O-ROUND Technology

Fully concealed hardware

Standard security

Resistance class up to RC2

Triple gasket system

Highly thermally insulating thermal foam (HCFC, HCF and FC free)

I-tec



In the standard version suited for passive houses



INGENIOUS GLAZING SYSTEM

Glass panes glued to the timber frame ensure good structural stability and high torsion resistance.



TRIPLE GASKET SYSTEM

Three continuous gasket levels without interruption protect the inside from moisture and additionally improve thermal and sound insulation.



HARMONIC DESIGN

The rounded edges of window sash and frame create a homely, pleasant living atmosphere.

HV 350

TIMBER/ALUMINIUM WINDOW WITH INTEGRATED BLIND

TECHNICAL DATA

Design Frame and sash flush on the outside, three-sided integration into facade is possible

Can be perfectly combined with UPVC/aluminium windows due to same outside appearance

Thermal insulation Thermal insulation with standard triple glazing ($U_g = 0.90 \text{ W/m}^2\text{K}$) $U_w = 0.95 \text{ W/m}^2\text{K}$

Best thermal insulation at low weight U_w up to $0.60 \text{ W/m}^2\text{K}$ (with 3LIGHT glazing)

Sound insulation Soundproofing up to 47 dB (with corresponding glazing)

System description 85 mm construction depth

By fitting sun protection between the panes (blinds, Venetian blinds or Duette®) protection from damage and weather, noiseless operation; available with solar powered drive

FIX-O-ROUND Technology

Fully concealed hardware

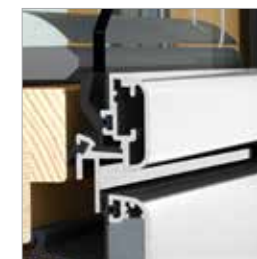
Standard security

Triple gasket system

Highly thermally insulating thermal foam (HCFC, HCF and FC free)

Suited for passive houses acc. to TU Graz with triple insulating glass in combination with additional glass pane

I-tec



FLUSH DESIGN

The rounded window sash ends flush towards the frame and can be rendered into the wall on three sides.



QUADRUPLE PROTECTION

Thermal, sound, sun and privacy protection all in one window. No additional structure provision is necessary. No extra fitting necessary for sun protection systems.



I-TEC SHADING

Available upon request with **photovoltaic blind**, Venetian blind or Duette®. Energy supply via integrated photovoltaic module, no extra fitting necessary, bi-directional wireless control.



ambiente

IDEAL FOR THE CLASSIC
AESTHETIST

Art nouveau, traditional, classic houses and elegant country estates fit exactly to your architectural taste. An exclusive, tasteful living ambiente underlines the special character of your home and your high living standard. A composition of timeless classic and elegance conveys living comforts full of atmosphere.

The strong profiled edges of ambiente windows emphasise your timeless living atmosphere. They are available in the materials UPVC, UPVC/aluminium and timber/aluminium. Georgian/feature bars and window shutters offer an additional multitude of design possibilities.

Enjoy interesting insights and views under the ambiente style section!





VIEW FROM THE INSIDE



The rounded edges of ambiente windows on the inside create a harmonic appearance. Rounded handles in chrome or polished brass emphasise the timeless character.

SURFACES AND INTERIOR COLOURS

Choose between natural timber and long-lasting UPVC. The large colour range offers a multitude of design possibilities.



UPVC / TIMBER
white



UPVC DECOR
Decor foils for UPVC surfaces in different colours



TIMBER
in all RAL colours as well as varnished and opaque standard colours

VIEW FROM THE OUTSIDE



Profiled sashes of ambiente windows end flush towards the rounded frame and create a homely atmosphere. Attached or integrated Georgian/feature bars in varying widths, gold or lead Georgian/feature bars as well as window shutters underline the classic outside decoration of the ambiente design style.

SURFACES AND EXTERIOR COLOURS

Choose between long-lasting UPVC and weather-resistant aluminium. Timber decor colours, metallic decor colours as well as stainless steel colours offer a multitude of design possibilities.








UPVC
white



ALUMINIUM
Attachment clad in many colours



ALUMINIUM
Attachment clad in structured timber decor colours

Material		Timber/aluminium			UPVC/aluminium			UPVC	
									
		HF 210	HF 310	HV 350				KF 410	KF 200
Thermal insulation (in W/m²K)		★★★★★	★★★★★	★★★★★				★★★★★	★★★★★
Coating LIGHT/SOLAR+		★★★★★	★★★★★	★★★★★				★★★★★	★★★★★
Best value		U _w = 0.90 / 0.96	U _w = 0.69 / 0.77	U _w = 0.96 / n.a.				U _w = 0.72 / 0.79	U _w = 0.88 / 0.95
		U _w = 0.67	U _w = 0.62	U _w = 0.60				U _w = 0.62	U _w = 0.74
Soundproofing (in dB)		★★★★★	★★★★★	★★★★★				★★★★★	★★★★★
		33 – 46	33 – 46	41 – 47				34 – 45	33 – 45
Security		★★★★★	★★★★★	★★★★★				★★★★★	★★★★★
		RC2	RC2	RC2				RC1, RC2	RC1, RC2
Locking		★★★★★	★★★★★	★★★★★				★★★★★	★★★★★
		concealed	concealed	concealed				concealed	exposed
Dimensions mm									
Frame construction depth		85	85	85				90	68
View width frame/sash		114	114	114				113	112.5
View width flying mullion (2 sashes)		134	134	134				133	119
View width transom (2 sashes)		173	173	173				187	170
Opening types									
Fixed		★	★	★				★	★
Turn and turn/tilt		★	★	★				★	★
Tilt		★	★	★				★	★
Sliding windows		★	★					★	★
Lockable doors		★	★					★	★
Sliding doors		★	★					★	★
Doors with low threshold		★	★	★				★	★
Outward opening doors								★	
Gaskets quantity		3	3	3				3	3
Bead gasket colour outside		black	black	black				light grey	light grey
Georgian bars (glued-on and integrated Georgian/feature bars in different widths)		★	★	★				★	★

Handles

Internorm offers a sophisticated selection of handles – here are a few recommendations from our range. A selection of designer handles are also available from your Internorm distribution partner!

Standard handle aluminium natural
Part no. 33899

Designer handle F9 steel
Part no. 34615

Designer handle Athinai chrome/stainless matt
Part no. 34596

Designer handle Bruxelles chrome satined
Part no. 34592

Designer handle brass polished
Part no. 34597

Designer handle Athinai brass polished
Part no. 34595

Designer handle Atlanta brass polished
Part no. 34750

Sun and insect protection

The sun and insect protection systems complement the windows to a functional unit and support the design of the house facade.

Windows with integrated blinds

Exposed roller shutters

Insect protection

Window shutters

Windows with integrated blinds: Sun and privacy protection integrated between the panes, therefore protected – choose between blinds, Venetian blinds or Duette®.

Exposed and mini exposed roller shutters: Completely fitted on to the window, can be combined with insect protection.

Insect protection: Fixed, turn, sliding or pull-down flyscreen. Can be combined with sun protection.

Window shutters: Made of aluminium, with many design possibilities; can be combined with insect protection.

Colours

Here is a selection of colours as a recommendation, matching your ambiente window. The complete colour range can be found in the overview from page 106 onward.

Exterior colours	Interior colours
 M916	 White
 HM304	 Brilliant white
 HM605	 FI916
 HM817	 FI501
 HM768	 FI503
 HDH13 Dark brown	 LA600
 HDS01	 FI507
 HDS04	 LA602
 HDS08	 FI509
 DM01 Dark green	 Golden oak

Large-scale elements

More light through large-scale glazing and lift-sliding doors, also with corner solutions in all-glass version, XL sizes up to 12 m wide and 17 m² glass area.

Sliding door UPVC, UPVC/aluminium

Lift-sliding door UPVC, UPVC/aluminium

Lift-sliding door timber/aluminium

KF 410
UPVC &
UPVC/ALUMINIUM WINDOWS

TECHNICAL DATA

- Design** The rounded inside design harmonises perfectly with the profiled outside design
- Can be perfectly combined with timber/aluminium windows due to same outside appearance
- Thermal insulation** Thermal insulation with standard triple glazing and highly insulating edge seal
 $U_g = 0.5 \text{ W/m}^2\text{K}$ $U_w = 0.72 \text{ W/m}^2\text{K}$
- For best energy efficiency SOLAR+ glazing ($U_g = 0.6 \text{ W/m}^2\text{K}$; g value 64 %) $U_w = 0.79 \text{ W/m}^2\text{K}$
- Sound insulation** Soundproofing up to 45 dB (with corresponding glazing)
- System description** 90/93 mm construction depth
- FIX-O-ROUND Technology
- Fully concealed hardware
- Standard security
- Triple gasket system
- 5 chamber system with highly thermally insulating thermal foam (HCFC, HCF and FC free)
- I-tec ventilation available upon request

I-tec

I-tec Glazing

FIX-O-ROUND Technology

I-tec Ventilation



Passive house certified in the standard version



UPVC VERSION

Along with the aluminium attachment clad version in all colours, the classic UPVC version in white with light grey gaskets is also available.



HARMONIC INSIDE DESIGN

The glazing bead is rounded and matches the traditional design style ambiente perfectly.



I-TEC VENTILATION

Individual control of fresh air for each room – no big heat loss, no pollen, no outside noise, with increased security.

KF 200
UPVC &
UPVC/ALUMINIUM WINDOWS

TECHNICAL DATA

- Design** The rounded inside design harmonises perfectly with the profiled outside design
- Can be perfectly combined with timber/aluminium windows due to similar outside appearance
- Also available in the classic UPVC version white
- Thermal insulation** Thermal insulation with standard triple glazing LIGHT
($U_g = 0.6 \text{ W/m}^2\text{K}$, g value 52 %) $U_w = 0.96 \text{ W/m}^2\text{K}$
- Best thermal insulation U_w up to $0.74 \text{ W/m}^2\text{K}$ (with corresponding glazing)
- Sound insulation** Soundproofing up to 45 dB (with corresponding glazing)
- System description** 68/71 mm construction depth
- FIX-O-ROUND Technology
- Fully concealed hardware available upon request
- Standard security
- Resistance class RC1 and RC2 tested (upon request)
- Triple gasket system
- 5 chamber system
- Locking parts screwed into steel – from a certain window size on
- Narrow view width up to 97 mm

I-tec

I-tec Glazing

FIX-O-ROUND Technology



UPVC VERSION

Along with the aluminium attachment clad version in all colours, the classic UPVC version in white is also available. Gaskets of the UPVC version are light grey as standard.



I-TEC GLAZING FIX-O-ROUND TECHNOLOGY

Continuous all around fixing of the glass pane ensures better stability, thermal and sound insulation, burglary protection and functioning security.



TRIPLE GASKET SYSTEM

Three continuous gasket levels without interruption ensure high tightness.

KV 440
UPVC/ALUMINIUM WINDOW
WITH INTEGRATED BLIND

TECHNICAL DATA

Design Innovative window with integrated blind in traditional rounded design outside and inside

Frame and sash flush on the outside, three-sided integration into facade is possible

Can be perfectly combined with timber/aluminium windows due to same outside appearance

Thermal insulation Thermal insulation with standard quadruple glazing ($U_g = 0.6 \text{ W/m}^2\text{K}$)
 $U_w = 0.77 \text{ W/m}^2\text{K}$

Best thermal insulation
 U_w up to $0.64 \text{ W/m}^2\text{K}$
(with corresponding glazing)

Sound insulation Soundproofing up to 45 dB
(with corresponding glazing)

System description 93 mm construction depth

Sun and privacy protection integrated between the panes and therefore protected – available with I-tec shading upon request

FIX-O-ROUND Technology

Fully concealed hardware

Standard security

Triple gasket system

Gasket colour outside black or light grey

5 chamber system with highly thermally insulating thermal foam (HCFC, HCF and FC free)

I-tec ventilation available upon request

I-tec

I-tec Glazing

FIX-O-ROUND Technology

I-tec Shading

I-tec Ventilation



QUADRUPLE PROTECTION

Thermal, sound, sun and privacy protection in one window. No structural provision necessary, no extra fitting for sun protection system necessary.



FLUSH DESIGN

The profiled window sash ends flush towards the frame and can be rendered into the wall on three sides.



I-TEC SHADING

Available upon request with **photovoltaic blind**, Venetian blind or Duette®. Energy supply via integrated photovoltaic module, no extra fitting necessary, bi-directional wireless control.

HV 350
TIMBER/ALUMINIUM
WINDOW WITH INTEGRATED BLIND

TECHNICAL DATA

Design Traditional rounded design outside and inside

Frame and sash flush on the outside, three-sided integration into facade is possible

Can be perfectly combined with UPVC/aluminium windows due to same outside appearance

Thermal insulation Thermal insulation with standard triple glazing ($U_g = 0.90 \text{ W/m}^2\text{K}$)
 $U_w = 0.95 \text{ W/m}^2\text{K}$

Best thermal insulation at low weight U_w up to $0.60 \text{ W/m}^2\text{K}$ (with 3LIGHT glazing)

Sound insulation Soundproofing up to 47 dB
(with corresponding glazing)

System description 85 mm construction depth

By fitting sun protection between the panes (blinds, Venetian blinds or Duette®) protection from damage and weather, noiseless operation; available with solar powered drive

FIX-O-ROUND Technology

Fully concealed hardware

Standard security

Triple gasket system

Highly thermally insulating thermal foam (HCFC, HCF and FC free)

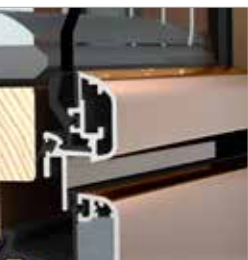
Suited for passive houses acc. to TU Graz with triple insulating glass in combination with additional glass pane

I-tec

I-tec Glazing

FIX-O-ROUND Technology

I-tec Shading



FLUSH DESIGN

The profiled window sash ends flush towards the frame and can be rendered into the wall on three sides.



QUADRUPLE PROTECTION

Thermal, sound, sun and privacy protection all in one window. No additional structure provision is necessary. No extra fitting necessary for sun protection systems.



I-TEC SHADING

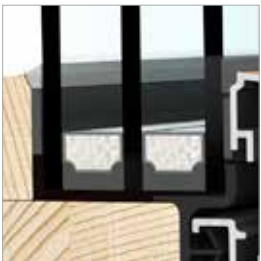
Available upon request with **photovoltaic blind**, Venetian blind or Duette®. Energy supply via integrated photovoltaic module, no extra fitting necessary, bi-directional wireless control.

HF 210
TIMBER/ALUMINIUM WINDOW

TECHNICAL DATA

- Design** The rounded inside design harmonises perfectly with the profiled outside design
- Can be perfectly combined with UPVC/aluminium windows due to same outside appearance
- Thermal insulation** Thermal insulation with standard triple glazing with aluminium spacer ($U_g = 0.7 \text{ W/m}^2\text{K}$)
 $U_w = 0.98 \text{ W/m}^2\text{K}$
- Also available with 48 mm glazing ($U_g = 0.5 \text{ W/m}^2\text{K}$ without krypton) at best price/service ratio
- Best thermal insulation
 U_w up to $0.67 \text{ W/m}^2\text{K}$ (with corresponding glazing)
- Sound insulation** Soundproofing up to 46 dB (with corresponding glazing)
- System description** 85 mm construction depth
FIX-O-ROUND Technology
Fully concealed hardware
Standard security
Resistance class up to RC2
Triple gasket system
Highly thermally insulating thermal foam (HCFC, HCF and FC free)

I-tec **I-tec Glazing** **FIX-O-ROUND** Technology



INGENIOUS GLAZING SYSTEM

Glass panes glued to the timber frame ensure good structural stability and high torsion resistance.



FULLY CONCEALED HARDWARE

No visible hardware parts as standard for better appearance, easier cleaning, but most of all for better air tightness from the inside.



TRADITIONAL DESIGN

Frame and sash end flush on the outside. The profiled edges of the window sash create an idyllic outside appearance.

HF 310
TIMBER/ALUMINIUM WINDOW

TECHNICAL DATA

- Design** The rounded inside design harmonises perfectly with the profiled outside design
- Can be perfectly combined with UPVC/aluminium windows due to same traditional outside appearance
- Thermal insulation** Thermal insulation with standard triple glazing and highly thermally insulating edge seal ($U_g = 0.5 \text{ W/m}^2\text{K}$) $U_w = 0.69 \text{ W/m}^2\text{K}$
- For best energy efficiency SOLAR+ glazing with $U_g = 0.6 \text{ W/m}^2\text{K}$; g value 64 %
- Sound insulation** Soundproofing up to 46 dB
- System description** 85 mm construction depth
FIX-O-ROUND Technology
Fully concealed hardware
Standard security
Resistance class up to RC2
Triple gasket system
Highly thermally insulating thermal foam (HCFC, HCF and FC free)

I-tec **I-tec Glazing** **FIX-O-ROUND** Technology



In the standard version suited for passive houses

TU Graz
PASSIVHAUSTAUGLICH
NACH RICHTLINIE WAT 1.5.2



INGENIOUS GLAZING SYSTEM

Glass panes glued to the timber frame ensure good structural stability and high torsion resistance.



TRIPLE GASKET SYSTEM

Three continuous gasket levels without interruption protect the inside from moisture and additionally improve thermal and sound insulation.



TRADITIONAL DESIGN

Frame and sash end flush on the outside. The profiled edges of the window sash create an idyllic outside appearance.



REVOLUTIONARY

NEW STANDARDS FROM INTERNORM.

Under the melodious title of **“I-tec”**, Internorm has been developing a series of revolutionary technologies to meet the rising demands on design, technology, quality and comfort.

I-tec ventilation:

- Better energy efficiency through integrated heat exchanger
- Continuous fresh air through automatic air exchange

I-tec locking:

- Maximum burglary protection through revolutionary hardware
- Easier cleaning of windows thanks to invisible locking and closing elements

I-tec shading:

- Sun protection with self-sufficient energy – no external power source necessary
- Integrated sun and privacy protection, therefore protected

I-tec glazing:

- Increased burglary protection thanks to the all around glueing of the glass pane
- Improved stability, thermal and sound insulation

I-tec SmartWindow:

- Control building technology conveniently via smartphone or tablet
- Can be operated via app at home or on the way



AIRING OF THE FUTURE

INDIVIDUAL. AUTOMATIC. HEALTHY.

I-tec Ventilation

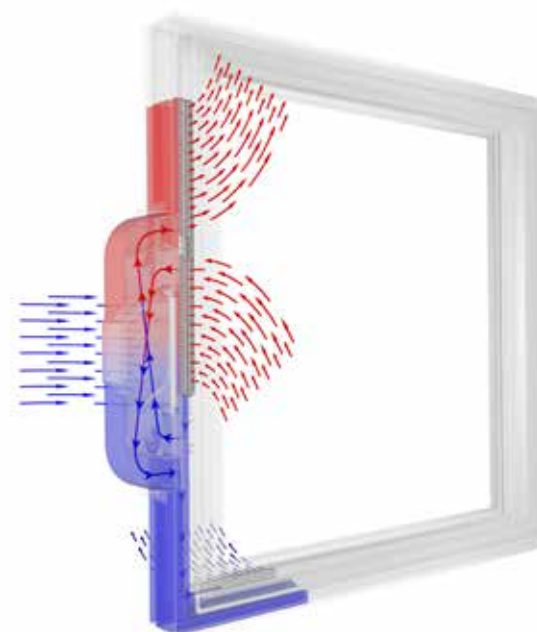
Thanks to Internorm you do not need to remember airing any longer. Because Internorm is offering you windows, where the ventilator is completely integrated into the frame. Even with closed windows this ensures fresh air 24/7 and optimum room climate.

Why is airing so important?

Fresh air is important for our health. It ensures wellbeing, good sleep, high concentration and high performance. With wrong airing humidity, CO₂ or other air impurities remain in the room and can cause considerable damage. The building structure can be damaged by mould and humidity, your health is endangered by mould, pollen and house dust and heat is lost.

How do you air correctly?

You could use a decentral ventilation system. It ensures perfectly fresh air, fully automatic and individual for each room.



Already integrated in the window

Internorm's I-tec ventilation is directly integrated in the window frame. Each room can be ventilated according to requirements. The ventilator can also be fitted in refurbishments without any problems, the appearance of the facade remains undisturbed.



FRESH AIR WITHOUT
BIG HEAT LOSS



FRESH AIR
WITHOUT POLLEN



FRESH AIR WITHOUT
OUTSIDE NOISE



FRESH AIR
WITHOUT DUST



FRESH AIR
AGAINST MOULD



FRESH AIR FOR
HEALTHY LIVING



FRESH AIR WITH
INCREASED SECURITY



FRESH AIR WITHOUT RISK OF
RAIN ENTERING IN



FRESH AIR INDIVIDUALLY
FOR EACH ROOM



FRESH AIR WITHOUT
WORRIES: AUTOMATIC FUNCTION



FRESH AIR WITHOUT
DRAUGHTS



FEEL SAFE

NO COMPETITION. PRECISE. DISCREET.

I-tec Locking

Instead of conventional locking pegs, flaps ensure secure and precise locking of the window sash to the frame. When locking, flaps which are positioned in short distances on all four sides of the sash, press directly against the inside of the frame and make levering of the window virtually impossible.

Contrary to systems with locking pegs which need regular adjusting, the I-tec locking needs no counter piece in the frame. The flaps always lock precisely and with undiminished power.

I-tec locking is integrated as standard in the UPVC or UPVC/ aluminium window KF 500 and achieves security class RC2N. Contrary to conventional mushroom shaped locking pegs, the function of KF 500 is not restricted in any way despite the high security class.



Convenient cleaning

Cleaning of the frame is made easier as there are hardly any locking parts. The few parts on the sash hardly protrude and in between the parts is a smooth, easy to clean UPVC surface.



LOW VIEWING HEIGHT
FOR MORE LIGHT



FRAMELESS
GLASS ARCHITECTURE



SASH WEIGHTS
UP TO 130 KG



DISCREET DESIGN
WITH CLEAR LINES



EASY-TO-CLEAN
FRAME



NO VISIBLE LOCKING PARTS
FOR NICER APPEARANCE



SAME OUTSIDE APPEARANCE
OF FIXED ELEMENT AND SASH



SHADING WITH SELF-SUFFICIENT ENERGY

INTEGRATED. INDEPENDENT. AUTOMATIC.

I-tec Shading

Internorm windows with integrated blinds can be powered by a self-sufficient photovoltaic module. I-tec shading works without external power source and the decorative effect of the window is fully retained.

The new automatic mode with day/night recognition allows automatic opening and closing of the blinds at sunrise and sunset. Measuring solar radiation and temperature prevents overheating of the rooms. In winter the automatic control keeps the blinds open and enables maximising of solar gains and therefore a reduction in heating costs.



INTEGRATED SUN AND
PRIVACY PROTECTION



AUTOMATIC HEAT
PROTECTION IN SUMMER



AUTOMATIC
DAY/NIGHT RECOGNITION



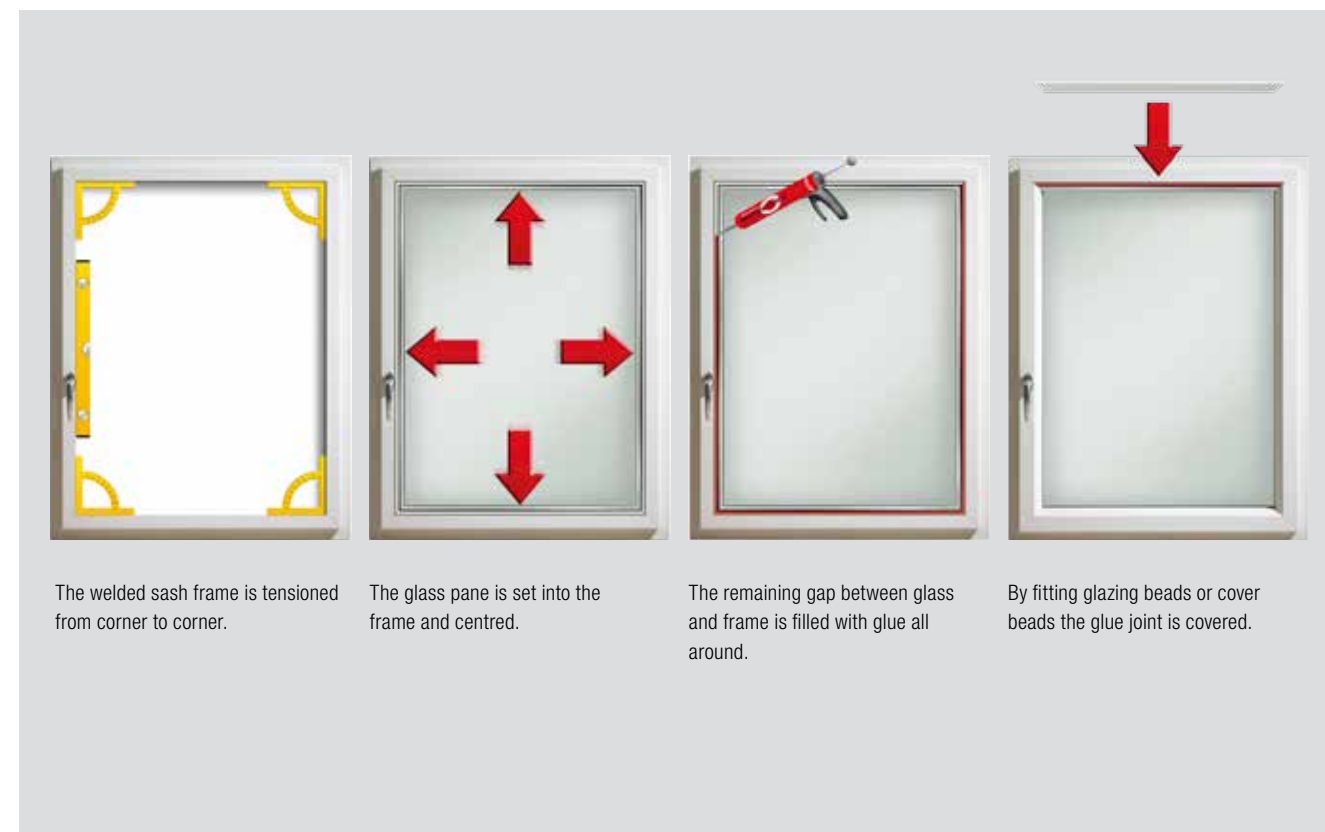
NO EXTERNAL POWER
SOURCE NECESSARY



MANUAL CONTROL
AVAILABLE



USE OF ENERGY
GAIN IN WINTER



INNOVATION ALL AROUND

CONTINUOUS. SECURE. STABLE.

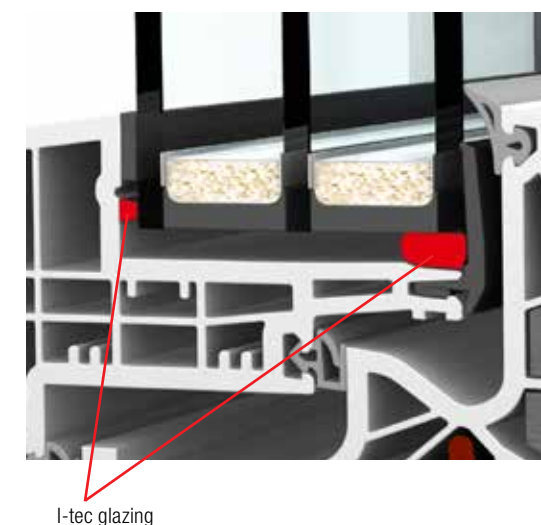
I-tec Glazing



Many window panes are only connected to the frame in very few positions. Internorm uses FIX-O-ROUND technology as standard for a continuous all around fixing.

The advantage of this technology lies in the continuous connection of the window frame with the glass pane. This improves stability, thermal insulation and soundproofing, burglary protection and functioning of the window for its entire lifespan.

Special glue ensures not only a tight connection from glass to frame, but also allows easy exchange of the glass pane.



MAXIMUM BURGLARY
PROTECTION



INCREASED
STABILITY



INCREASED THERMAL
INSULATION



IMPROVED SOUND
INSULATION



BUILDING CONTROL

INTELLIGENT. SIMPLE. CONVENIENT.

I-tec SmartWindow

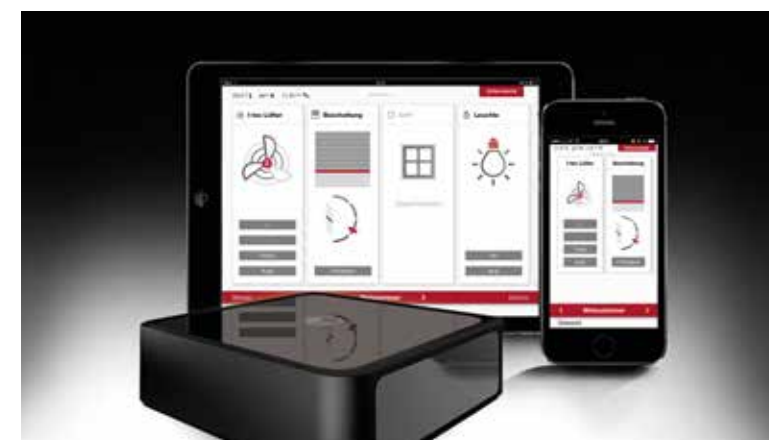
Internorm's intelligent building control I-tec SmartWindow makes it easy for you to operate your ventilation and shading simply and conveniently using a smartphone or tablet. No matter if you are at home or away, you can remotely control your I-tec ventilation, I-tec shading, sun protection and fanlight opener via the Internorm app or check the status of your windows via opening sensors.

You can download the I-tec SmartWindow app for free in the app store or in Google play with its associated installation instruction. A few taps with your finger on the user interface are enough to move blinds up or down, adjust the light guidance or regulate the air volume for the ventilator. Also fanlights can easily be opened and closed or open, tilted or closed windows monitored.



At home or on the go

Whether you are on holiday, or at home sat comfortably on your sofa – the complete building technology can be remotely operated using the free Internorm app. All you need is your smart phone or tablet. A gateway at home added to your WLAN network acts as interface for the relevant components.



Free download of Internorm App I-tec SmartWindow:



FREE APP
WITH INSTRUCTIONS



EASILY
EXTENDABLE



SIMPLE DEFINITION
OF REQUIREMENTS



MANUAL CONTROL
AVAILABLE



CONTROL VIA TASKS
ALSO ON HOLIDAY



INDIVIDUAL
SETTINGS



INDIVIDUAL

INTERNORM'S DESIGN POSSIBILITIES.

The design of your house is as individual as you are. Let your taste decide on straight-lined, modern, classical or traditional design styles and allow your home to be as individual as you are. By choosing Internorm you can be sure to get the perfect windows for your house style. With almost unlimited design possibilities we will gladly fulfil your exact requirements.

Internorm windows can support the design of your home with a wide range of design style including:

- Attractive handles in aluminium, chrome and brass
- A multitude of glazing from Satinato to Linea
- Security glazing as well as highly thermally insulating glazing
- Numerous colours for UPVC, timber and aluminium surfaces
- Sun and insect protection systems



PERFECT COMBINATIONS

TRUE TO STYLE. INDEPENDENT OF MATERIALS. MATCHING.

The demands on design, energy efficiency and comfort of the windows increase with individual architecture. Function and design are no contradiction with Internorm. UPVC/aluminium and timber/aluminium systems can be perfectly combined.

Outside same design – choose between UPVC or timber for the inside

If you would rather have a UPVC/aluminium window in the bathroom because of the high humidity, but would not like to miss the timber/aluminium window in the living room, then you can combine these two materials without any problems with Internorm. The design of your window and therefore the exterior design of your house always remains the same. Inside of each room you have the possibility to create your window according to your requirements – either in UPVC or in timber.

Uniform appearance for architecture true to its style

No matter in which design style you create your house – if avant-garde, modern, elegant, playful or timeless – Internorm is offering you perfect combinability for each of these styles in the materials UPVC and timber. The aluminium clad on the outside of the window always adapts to the style of your outside facade.

Can also be combined with lift-sliding doors

You do not have to miss large-scale glazing and more light in your rooms. We are offering you lift-sliding doors in the materials UPVC/aluminium and timber/aluminium, matching the window style.



SAFE WITH SECURITY

RELIABLE. EFFECTIVE. PATENTED.

Optimum burglary protection and maximum security for children are main requirements to be able to feel at ease in your own four walls and to feel safe. A considerable contribution to this feeling of homeliness comes from the windows. You can protect your family effectively with Internorm's sophisticated technologies und make it difficult for burglars to gain access to your house.



Security locking elements

All Internorm window systems are equipped with standard security. Solid, attractive, yet discreet designer locking elements in silver together with the mushroom shaped pegs in the window frame lock the window.

I-tec glazing

Thanks to Internorm's patented glazing technology, the glass pane cannot be pushed out. The glass pane is glued all around into the window frame and therefore stays securely and tightly. All Internorm window systems are equipped as standard with this I-tec innovation.

Concealed hardware

Concealed hardware ensures that windows cannot be levered out of their hinges and serves for discreet appearance and easy cleaning.

I-tec locking

Internorm's revolutionary locking technology guarantees maximum protection. When locking the window, flaps open and press on to all sides directly inside the frame. The window cannot be levered any longer.



Security handle

The Secustik handle with special security features offers highest security. The patented locking mechanism protects absolutely secure against drilling from the outside (standard with UPVC and UPVC/aluminium window KF 500).

Lockable handles

Lockable handles offer optimum security for children and perfect burglary protection in one. The window is locked via key or push button and cannot be opened, neither from the outside, nor from the inside.

Electronic sensor

Locking sensors report reliably and inconspicuously if and which windows or window doors are open or locked. The sensor can be combined with any customary alarm systems.

Laminated glass

Contrary to conventional window glass which splinters when broken, laminated glass does not break apart. Tear-resistant foils keep the panes together, the glass stays in the window frame and danger of injury is averted.



LIFT-SLIDING DOORS

UNLIMITED. NO FRICTION. FRAMELESS.

Lift-sliding doors are the connecting part between inside and outside. Frameless side elements, XL formats and special solutions enlarge the room beyond its real borders and create a new, generous awareness of space. The borders between inside and outside disappear almost magically and connect the inside space with the surrounding nature. Extremely low floor thresholds ensure a barrier-free and flowing connection to the outside.

Large-scale glazings create more light and liven up the rooms on the inside. The frame slides smoothly over the fixed glazing on the side. Without any effort the large glass elements can be opened. No bulky doors which reach into the room. No window sashes which would take up precious living space.

Internorm's lift-sliding doors are available in the materials of UPVC, UPVC/aluminium as well as timber/aluminium. They can be perfectly combined with all Internorm window systems as well as sun and insect protection.



Handle G80
Part no. 36475



Handle Dallas
Part no. 36412



Handle Softline
Part no. 32170

KS 430
UPVC & UPVC/
ALUMINIUM LIFT-SLIDING DOOR

TECHNICAL DATA:

- Design

Modern square-edged appearance inside and outside

Can be combined with UPVC, UPVC/aluminium and timber/aluminium window systems

Three attractive handle designs

Five decor variations inside

Three-sided integration into the brickwork available
- Thermal insulation

Thermal insulation
U_w up to 0.64 W/m²K, passive house suited
- Sound insulation

Soundproofing up to 43 dB (with corresponding glazing)
- System description

Standard toughened panes protect from injuries when glass breakages

Large-scale elements, easy lifting and sliding of sash up to 400 kg sash weight

Handle damping as standard for smooth, soft sliding back of handle

Highly thermally insulating glass fiber threshold with optimum thermal insulation and stability

Flat threshold – suitable for barrier-free building (optional)

Guiding rail concealed in frame with integrated stopper buffer – for perfect appearance, easy to operate and optimum burglary protection

Resistance class up to RC2 (optional)

Glazing fixed element directly in frame – no visible sash profile, more light through narrow view widths



FLAT THRESHOLD
A flat glass fibre threshold ensures comfortable passing and is best suited for barrier-free building.



DESIGN REQUIREMENT
Fixed glazing directly in the frame, no sash profile visible, ensures more light through narrow view widths.



MANY DESIGNS
Optional sash imitations for perfect parallel running of glazing bead.

HS 330
TIMBER/ALUMINIUM
LIFT-SLIDING DOOR

TECHNICAL DATA:

- Design

Modern square-edged appearance inside and outside

All-glass corners for modern architecture

Can be combined with UPVC/ aluminium and timber/aluminium window systems

Three attractive handle designs

Three-sided integration into the brickwork available
- Thermal insulation

Thermal insulation
U_w up to 0.73 W/m²K, passive house suited

Standard triple security glazing for best thermal insulation
- Sound insulation

Soundproofing up to 40 dB (with corresponding glazing)
- System description

Toughened glass panes protect from injuries when glass breakages

Large-scale elements, easy lifting and sliding of sash up to 400 kg sash weight

Handle damping as standard for smooth, soft sliding back of handle

Highly thermally insulating glass fiber threshold for optimum thermal insulation and stability

Flat threshold – suitable for barrier-free building

Guiding rail concealed in frame with integrated stopper buffer – for perfect appearance, easy to operate and optimum burglary protection

Resistance class RC2 (optional)

Glazing fixed element directly in frame – no visible sash profile, more light through narrow view widths



SOPHISTICATED TIMBER APPEARANCE
Continuous timber design in the lower threshold area of the lift-sliding door.



PERFECTED GLASS APPEARANCE
No screwed-in sash in fixed element, can be rendered on three sides.



ENERGY-SAVING GLASS FIBRE THRESHOLD
For optimum thermal insulation and stability, flat version for comfortable passing.



PANORAMA HX 300

OPEN. BRIGHT. FREE.

Large-scale glazings which can be completely integrated into the brickwork, create unlimited freedom for your home. They bring light to the inside and at the same time offer full view to the outside.

Innovative solutions such as glass joints where the transition between the glass panes is virtually invisible, offer many possibilities in the modern, large-scale glass architecture. You can set optical highlights with integrated windows in the style of your house.

Enjoy far-reaching views

- Frameless glass architecture
- Open bright living environment
- Create unlimited freedom



The frame disappears almost completely into the facade.

HX 300 PANORAMA

TECHNICAL DATA:

Design	<p>Slim glass joints support the design requirement of the modern glass architecture</p> <p>The frame disappears almost completely into the facade</p> <p>Only windows and doors which can be opened, are noticed</p>
Thermal insulation	<p>Thermal insulation</p> <p>U_w up to 0.73 W/m²K</p>
Sound insulation	<p>Soundproofing up to 40 dB</p>
System description	<p>HX 300 is a system frame made of timber/aluminium which allows fitting of window models and insulating glazing</p> <p>Toughened glass panes protect from injuries when glass breakages</p> <p>Innovative glazing technology enables large, continuous glass areas</p> <p>Available up to 10.5 m² glass area</p> <p>Strong, multi-layered laminated frame constructions</p> <p>Frameless installation into brickwork</p> <p>Window sills and patio floors can be connected neatly and tightly.</p>

I-tec



SLIM GLASS TRANSITION

Trendy, slim glass joints allow inconspicuous transitions of large glass areas.



LARGE-SCALE GLAZINGS

Glass dividing transoms 97 mm wide ensure increased structural integrity and allow large-scale glazing.



INTEGRATED WINDOW SASH

All Internorm timber/aluminium windows (one or two sash) can be integrated into HX 300.

SUN AND INSECT PROTECTION

COMBINABLE. INTEGRATED. MANY VARIATIONS.

The sun and insect protection systems complement the windows to a functional unit and support the design of the house facade.

Windows with integrated blinds: Integrated sun and privacy protection between the panes – choose between blinds, Venetian blinds or Duette®, upon request with energy self-sufficient shading (I-tec shading).

Venetian blinds: Optimum control and guidance of light and warmth through adjustable slats, upon request with day light guidance RETROLux. Can be combined with insect protection.

Attachment Venetian blinds: Optimum control and guidance of light and warmth through adjustable slats. Can be combined with insect protection.

Exposed and mini exposed roller shutters: Completely fitted on to the window. Can be combined with insect protection.

Insect protection: Fixed, turn, sliding or pull-down flyscreen. Can be combined with sun protection.

Window shutters: Made of aluminium, with many design possibilities. Can be combined with insect protection.



Venetian blinds



Exposed roller shutters



Exposed roller shutters (round box)



Mini exposed roller shutters



Windows with integrated blinds



Inside blinds



Pull-down flyscreen



Turn or fixed frame



Sliding frame



Window shutters



GLAZING

ENERGY-SAVING GLAZING

The fact that around 30 % of the warmth of a house is lost via the windows explains the rising demand for highly thermally insulating windows. In order to fulfil the trend of innovative highly insulating triple glazing solutions, Internorm has expanded with a third insulating glass line and with that, now becomes Austria's largest manufacturer of insulating glass.

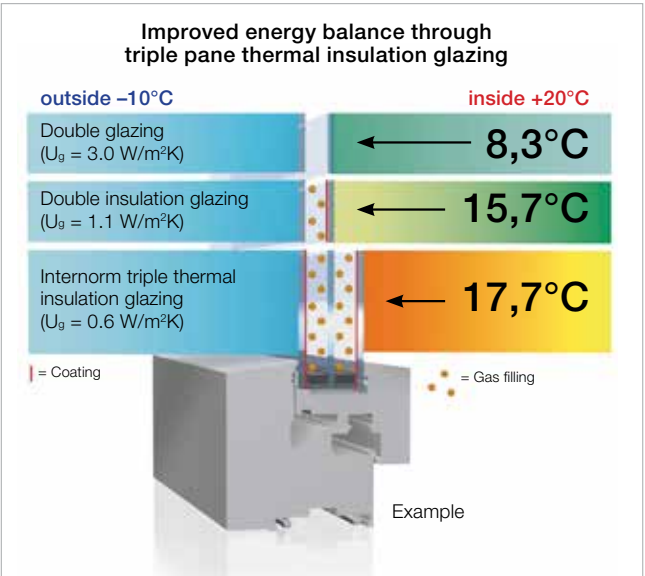
Insulating space between the glass panes

Heating costs can be saved by applying thin precious metal coatings onto the glass surface and by using noble gases in the spaces between the glass panes. The noble gases used are **argon and krypton**, which have a considerably lower thermal conductivity than air and therefore, additionally reduce the heat loss towards the outside. The differences in the thermal insulation value of glazings are the result of different coating structures and noble gases.

Triple thermal insulation glazing

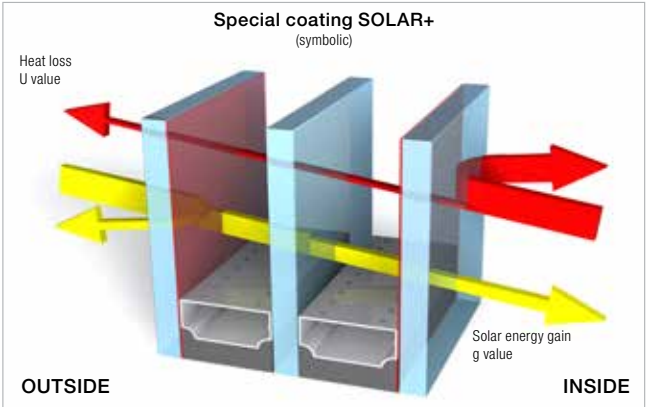
The highly insulating properties of Internorm window systems with triple thermal insulating glazing compared to

double glazing allow up to 40 % more glass areas with the same amount of heating costs. By using such insulation glazing the energy balance is improved considerably and thus keeps the heating costs low.



SOLAR+ INTERNORM'S ENERGY EFFICIENT GLAZING

Internorm's SOLAR+ glazing is characterised by its special coating SOLAR+. The triple insulating glass features **extremely high thermal insulation**, as well as an **overall energy transmission factor** (g value) which can otherwise only be achieved at this level with double glazing. Due to this exceptional rate of thermal insulation (U_g) and energy transmission (g value) this glazing is perfectly suitable for implementing in solar buildings. Especially in cold seasons it uses low solar radiation to its optimum and keeps the gained heat in the



building. The **high g value** makes it possible even in not ideal building positions or in not precisely south-facing glazing positions to optimise the gain on passive solar energy.

Here the windows are the heating

With triple glazing SOLAR+ the overall energy transmission is 20 % higher than with standard triple glazing. Thus the **solar energy gain** also increases by 20 %. Through the glazing you have **additional free-of-charge heating!**

A plus point for climate protection

Internorm's climate protection windows achieve optimum solar gain and guarantee maximum thermal insulation thanks to the energy saving triple pane technology and the innovative special coating SOLAR+. This reduces emission of CO₂ and SO₂.

More light – more brillancy: SOLAR+

The high transparency creates warm brightness on the inside: an important asset especially in winter.

GLAZING SYSTEMS

The **thermal insulation** of a window depends on the frame material, the glazing and the tightness. The parameter is the U value – the lower the figure, the better the thermal insulation.

The **soundproofing** of a window depends on the frame material, the glazing and the joint permeability. The parameter is the dB value – the tighter a window closes, the better the insulation performance.

U_w = thermal insulation of the window acc. to EN 10077-1 (calculated) or acc. to EN 12567-1 (tested) (is stated in watts per square metre kelvin = W/m²K); the following tables state this value per Internorm window system – with stainless steel or ISO spacers respectively

U_g = thermal insulation of the respective glazing

R_w = soundproofing of the window acc. to DIN EN 20140-3 (stated in decibel = dB) * test certificate available

TRIPLE GLAZING

UPVC and UPVC/aluminium windows

					KF 200		KF 220		KF 410		KF 405		KF 500	
Glass	Glass code		U _g /R _w	g	ALU	ISO	ALU	ISO	ALU	ISO	ALU	ISO	ALU	ISO
4b/12Ar/4/12Ar/b4	3NK	LIGHT SOLAR+	0.7/33 0.8/33	50 % 62 %	1.0* 1.1*	0.95* 1.0*								
4b/14Ar/4/14Ar/b4	38K	LIGHT SOLAR+	0.6/33 0.7/33	50 % 62 %	0.96* 1.0*	0.88* 0.95*								
6b/10Ar/5/10Ar/b5	3P5	LIGHT	0.8/39	49 %	1.1*	1.0*								
4b/18Ar/4/18Ar/b4	3N2	LIGHT SOLAR+	0.5/34 0.6/34	50 % 62 %			0.85* 0.92*	0.74* 0.81*	0.82* 0.89*	0.72* 0.79*	0.80* 0.88*	0.71* 0.78*	0.79* 0.87*	0.69* 0.76*
6b/18Ar/4/16Ar/b4	33U	LIGHT SOLAR+	0.5/40 0.6/40	49 % 61 %			0.85* 0.92*	0.74* 0.81*	0.82* 0.89*	0.72* 0.79*	0.80* 0.88*	0.71* 0.78*	0.79* 0.87*	0.69* 0.76*
4b/16Ar/4/15Ar/b44.2(VSG-S)	34N	LIGHT SOLAR+	0.6/42 0.7/42	50 % 62 %			0.92* 0.99*	0.81* 0.89*	0.89* 0.96*	0.79* 0.86*	0.88* 0.95*	0.78* 0.86*	0.87* 0.94*	0.76* 0.84*
44b.2 (VSG-S)/15Ar/4/12Ar/b44.2(VSG-S)	3FH	LIGHT SOLAR+	0.7/45 0.7/45	47 % 56 %			0.99* 0.99*	0.89* 0.89*	0.96* 0.96*	0.86* 0.86*	0.95* 0.95*	0.86* 0.86*	0.94* 0.94*	0.84* 0.84*
8b/16Ar/5/18Ar/b44.2(VSG-S)	3NU	LIGHT SOLAR+	0.5/44 0.6/44	48 % 59 %					0.82* 0.89*	0.72* 0.79*				

TRIPLE GLAZING

Timber/aluminium window

					HF 210		HF 310	
Glass	Glass code		U _g /R _w	g	ALU	ISO	ALU	ISO
4b/12Ar/4/12Ar/b4	3NK	LIGHT SOLAR+	0.7/30 0.8/30	50 % 62 %	0.98* 1.0*	0.90* 0.96*	0.98* 0.97	0.87* 0.91
6b/10Ar/5/10Ar/b5	3P5	LIGHT	0.8/36	49 %	1.0	0.96	0.97	0.91
4b/18Ar/4/18Ar/b4	3N2	LIGHT SOLAR+	0.5/35 0.6/35	50 % 62 %	0.86* 0.93	0.74* 0.81	0.79* 0.88	0.69* 0.77
6b/18Ar/4/16Ar/b4	33U	LIGHT SOLAR+	0.6/39 0.7/39	49 % 61 %	0.93* 0.98	0.81* 0.90	0.88* 0.98	0.77* 0.87
4b/16Ar/4/15Ar/b44.2 VSG-S	34N	LIGHT SOLAR+	0.6/42 0.7/42	50 % 62 %	0.93 0.98	0.81 0.90	0.88 0.98	0.77 0.87
44b.2/14Ar/4/12Ar/b44.2 VSG	3FH	LIGHT SOLAR+	0.7/46 0.7/46	47 % 56 %	0.98 0.98	0.90 0.90	0.98 0.98	0.87 0.87

WINDOWS WITH INTEG. BLINDS

UPVC/aluminium and timber/aluminium

					KV 240		KV 440		HV 350	
Glass	Glass code		U _g /R _w	g	ALU	ISO	ALU	ISO	ALU	ISO
4 // 6/18Ar/b4	2KU	LIGHT	1.1/40	62 %	1.1	1.1	1.0*	0.98*	1.0	0.95*
6 // 3bESG/10Kr/2TVG/10Kr/b3ESG	37F	LIGHT	0.6/40	51 %		0.80*				
6 // 3bESG/10Kr/2TVG/10Kr/b3ESG	37F	LIGHT	0.6/44	51 %					0.72*	0.68*
6 Lu 4bESG/10Ar/4/10Ar/b4	37M	LIGHT	0.7/44	50 %					0.85*	0.81*
6 // 3bESG/12Ar/3/14Ar/b4	3AD	LIGHT SOLAR+	0.7/43 0.8/43	51 % 63 %			0.82 0.89	0.77 0.84		
6 // 3bESG/12Kr/3/14Kr/b4	3AE	LIGHT SOLAR+	0.5/43 0.6/43	51 % 63 %			0.75 0.75	0.70 0.70		

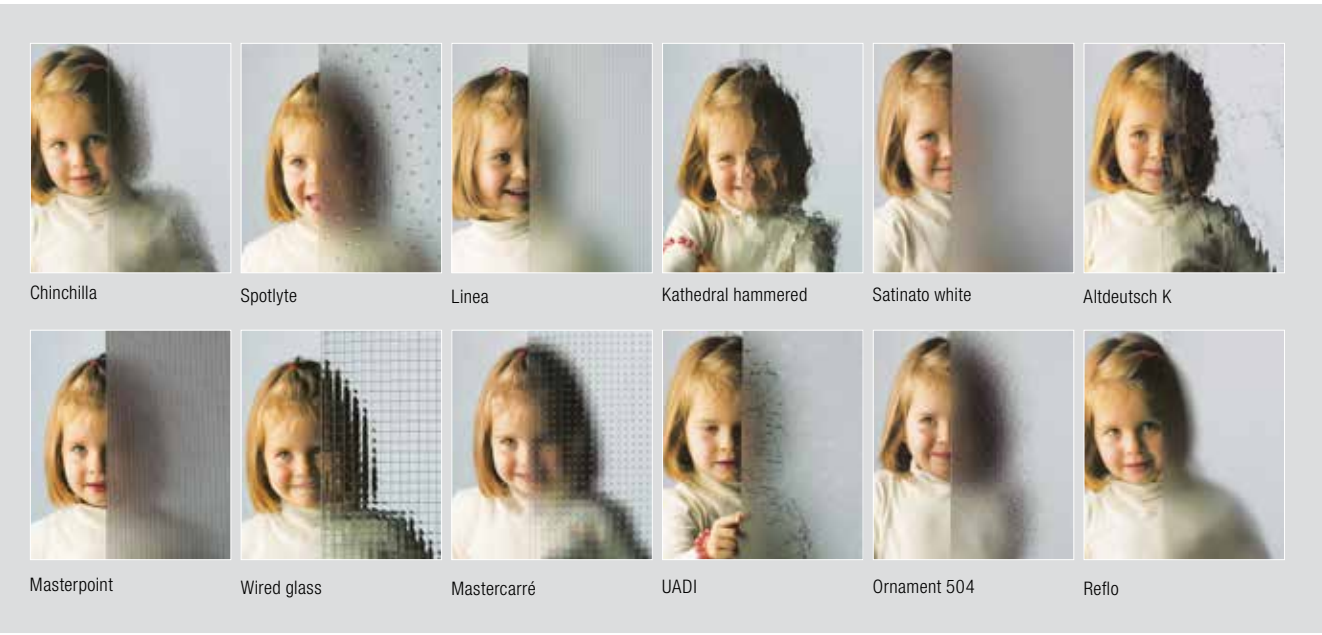
LIFT-SLIDING DOORS

UPVC, UPVC/aluminium and timber/aluminium

					KS 430			HS 330		
Glass	Glass code		U _g	g	R _w	ALU	ISO	R _w	ALU	ISO
4bESG/18Ar/4/18Ar/b4ESG	3T6	LIGHT SOLAR+	0.5 0.6	50 % 62 %	32 32	0.76* 0.81*	0.68* 0.73*	33 33		0.73 0.81
6b/16Ar/5/18Ar/b44.2(VSG-S)	3F8	LIGHT SOLAR+	0.5 0.6	49 % 60 %	40 40	0.76*	0.68*	40 40		0.73 0.81

Thermal insulation and soundproofing values for windows depend on size and version. The stated values apply – as defined acc. to standards – to one sash windows, size 1230 x 1480 mm and lift-sliding doors, size 3800 x 2500 mm and in the versions stated in the test certificates. Sizes and versions deviating from this can achieve different results.

GLASS TYPES



SPACERS

Internorm **ISO spacers** achieve the highest overall energy efficiency of the window system. Spacers are also available in aluminium.

SECURITY GLAZING

The **single pane security glass** (ESG) offers increased resistance against mechanical and thermic tensions. The **laminated security glass** (VSG) offers burglary protection through active and passive security. The splinter-free glass with a highly tear-resistant, viscoplastic intermediate layer also ensures protection from injury.



The laminated security glass does not break apart despite using force. Conventional window glass splinters and entry through the window is possible.

IMPORTANT INFORMATION

Designer glass cannot always be depicted completely true to the original in colour and structure. To avoid misunderstandings please refer to glass samples provided by your Internorm distribution partner. Due to physical reasons under certain climatic conditions the outer glass pane in the gap between the panes of **windows with integrated blinds** where the sun protection is, can show condensation.

More detailed information on all relevant subjects and further advice can be found on www.internorm.co.uk

HANDLES

				
Handle G80 Part no. 36423	Handle G80 Part no. 36404	Handle G80 Part no. 36400	Secustik handle G80 Part no. 36431 (only for KF 500)	Handle Dallas Part no. 36426
				
Standard handle aluminium natural Part no. 33899	Designer handle steel Part no. 34615	Designer handle white Part no. 33896	Handle with push button Part no. 33885	Designer handle Bruxelles chrome satined Part no. 34592
				
Handle Amsterdam aluminium natural Part no. 36416	Designer handle Athinai chrome/stainless steel matt Part no. 34596	Designer handle Athinai brass matt/aluminium steel Part no. 34594	Designer handle Bruxelles brass polished/chrome Part no. 34590	Designer handle brass polished Part no. 34597
				
Handle lockable brass Part no. 33886	Designer handle Athinai brass polished Part no. 34595	Designer handle Bruxelles brass polished Part no. 34591	Designer handle Atlanta brass polished Part no. 34750	
				
Handle G80 Part no. 36475	Handle Dallas Part no. 36412	Handle Softline Part no. 32170		



Surfaces & colours: **INTERNAL SIDE OF WINDOW**

UPVC

UPVC white

Decor foils*

Brilliant white**

Golden oak**

Cream white***

Dark grey*

Oregon decor**

Standard colours spruce, varnished

FI500

FI505

FI501

FI506

FI502

FI507

FI503

FI508

FI504

FI509

Standard colours larch, varnished

LA600

LA601

LA602

Standard colours spruce, opaque

FI916

Timber

Timber type spruce

Timber type larch

* Available with KF 410 and KV 440 in studio and home pure

** Available with KF 410, KF 200 and KV 440 in home soft and ambiente

***only with KF 200

Surfaces & colours: **EXTERNAL SIDE OF WINDOW**

UPVC

UPVC white

ALUMINIUM ATTACHMENT CLAD

M916

HM803

HM113

HM817

HM735

HM768

HM906

HM304

HM704

HM716

HM907

HM605

All standard colours highly weather-resistant, except M916 (facade quality)

HDS

HDS01

HDS02

HDS03

HDS04

HDS05

HDS06

HDS07

HDS08

Intensive colour appearance, however colour tolerances possible.

Timber decor

HDH17
Light grey

HDH14
Light brown

HDH12
Middle brown

HDH13
Dark brown

HDH colours have a lively timber appearance being hand-finished with pattern coating, however colour tolerances are possible.

Metallic decor

DM01
Dark green

DM02
Grey

DM03
Dark grey

Stainless steel

EL01 Stainless steel look matt

EL02 Stainless steel look gloss

hires colours

HF916

HF304

HF113

HF735

HF704

HF716

HF817

HF768

HF605

HF605

HF704

HF716

HF817

HF768

HFM11

HFM12

HFM13

HFM14

HFM21

HFM22

HFM01

HFM02

HFM03

HFM04

HFM05

For surface versions HF (highly weather-resistant fine structure), HFM (highly weather-resistant fine structure metallic), HM (highly weather-resistant standard colour) and HDH (highly weather-resistant timber decor colour) a special highly weather-resistant powder coating is applied.

Due to printing and manufacturing technology colour deviations between illustrations in this brochure and original products may occur. Your Internorm distribution partner will gladly show you original samples.

SPECIAL COLOURS

A variety of design possibilities is offered by the Internorm RAL colour range (facade quality). Applies to aluminium outside and timber inside.

Internorm

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HELPFUL

COMPETENT TIPS BY INTERNORM.

Minimum energy consumption with maximum living comfort plays an important role in a new building or a building refurbishment. Often enough it is not easy to keep an overview in the plethora of offers.

Therefore, rely on a specialist like your Internorm distribution partner. Your Internorm distribution partner can guarantee you competent advice and professional fitting. Our checklist offers you a little helping hand before you purchase your windows.

Additionally, you will receive here the following helpful tips about:

- Energy efficient building
- Trouble-free refurbishments
- The perfect installation
- Thermal and sound insulation
- Passive houses



NEW BUILDINGS

BUILD ENERGY EFFICIENTLY

Not only passive houses help with saving energy – also the conventional building of houses can help to save much energy and CO₂. The necessary know-how is of paramount importance. Your competent Internorm distribution partner will gladly advise you.

Energy performance certificate

Since 2006 an energy performance certificate has been obligatory for new buildings in the EU. It is a kind of registration document for your house and contains worthwhile information like e.g. energy requirements, energy loss through individual building components and through ventilation, energy gain from the sun as well as the heating load of the building. These details are very valuable for calculating different options at a later renovation or refurbishment of the house.

TIP

What is important for a perfect window

We would like to help you turn your ideas into reality to really feel at home with your new windows! For further information please find a checklist on page 122.

The most important parameter in the energy performance certificate is the so-called **energy parameter**. It indicates the most common comparable value which describes the thermal quality of the building shell and states how much **heating energy per square metre living area per year** is required. The energy parameter is given in **kWh/m²a**.

Window size and orientation

Position your windows mainly south-, west- and east-facing to be able to use the sun best. Large south-facing window areas create good energy balance and bring light and life into your rooms. To avoid overheating of the rooms, consider in the planning stages to install sun protection systems. Additionally, insect protection systems can be integrated.



FITTING

CERTIFIED FITTERS GUARANTEE EXPERT INSTALLATION.

We ensure that only trained and certified fitters carry out the installation of windows, doors and large-scale elements. Professional fitting is required for perfect functionality and long-term usability. Especially in the connection area to the brickwork as incorrect installation can cause big heat loss. Practise has shown that improper construction connections especially in this area can lead to formation of condensation and mould.

Using appropriate transport aids and cranes enables even over-sized windows to be fitted nearly anywhere. Our qualified and especially trained window fitters can advise you competently in all individual architectural wishes and will implement your design ideas to your fullest satisfaction.



CARE

REGULAR MAINTENANCE AND CARE KEEPS YOUR WINDOWS LOOKING NICE FOR A LONG TIME.

Internorm products are manufactured as high-quality products and guarantee long lifespans. By regular maintenance and care you can keep your windows and doors looking pristine for a long time and this will also furtherly increase the lifespan. We recommend that our trained personnel maintains your Internorm products once a year. They will adjust your windows, clean drainage slots, oil the hardware and check

it for wear and tear, clean gaskets and check them for cracks. Of course, you can clean your Internorm products yourself. For this we offer various care products. These you will receive together with an information booklet at your Internorm distribution partner or in the Internorm online shop for care products under www.internorm.com.





Dobratch summit house 2143 m, Transform Architekten ZT-GmbH, Architekt DI Günter Weratsch-



THERMAL INSULATION

ENERGY EFFICIENT. PLEASANT. WARM.

Highly thermally insulating window systems ensure homeliness and warmth in your own four walls. In connection with a special coating for using solar radiation they virtually become your free-of-charge additional heating.

As a building can lose approximately 25 to 30 % of its energy through the windows, the thermal insulation of the windows is especially important. Through careful planning correct positioning of the window areas (large window areas south-facing) can positively influence the energy balance of the building. The thermal insulation of the window depends on the frame material, the insulating glass and the tightness of the window. The **parameter for the insulating capability** of the window is the **U value**. **The lower the value, the better the thermal insulation.** Additional features such as roller shutters and window shutters can improve the U value.



Possible overall temperature losses in a badly insulated house

SOUNDPROOFING

CALM. COZY. QUIET.

Interference of noise is unpleasant and can, given the right intensity and duration, affect the human body negatively. Noise is perceived through the human ear and passed on to the brain.

Soundproofing of a window is measured in decibels. The higher the value, the better the soundproofing. Soundproofing states how much sound energy from the original sound energy is allowed to pass through. At an insulation of 10 dB 1/10 of the original sound energy passes through, at 20 dB 1/100, at 30 dB 1/1000 etc. Humans perceive a reduction of 10 dB as halving the noise. Soundproofing of a window is dependent on frame material, insulating glass, tightness of the window and the construction connection.

VOLUME	NOISE EFFECT	TYPE OF SOUND
10 dB	very quiet	Pin dropping
20 dB		Leaves rustling, clock
30 dB		Whispering
40 dB	quiet	Quiet talking
50 dB		Residential street, birds
60 dB	loud	Talking, radio
70 dB		Loud talking, street
80 dB		Heavy traffic
90 dB	very loud	Shouting, hooting
100 dB		Circular saw
110 dB		Pneumatic hammer
120 dB		Jet plane
> 150 dB	unbearable	Explosion, rocket



PASSIVE HOUSE

PASSIVE HOUSE WINDOWS: DUAL CAPACITY

The window in a passive house plays a prominent role in two ways – firstly, the heat loss despite large glass surfaces can be reduced and secondly, windows increase the possibilities for heat gain through solar irradiation.

Internorm's highly thermally insulating windows fulfil this seemingly contradictory dual capacity exemplary: thermal insulation glazing as used in passive houses achieves U_g values of up to $0.4 \text{ W/m}^2\text{K}$.

Essential principles for the construction of passive house windows:

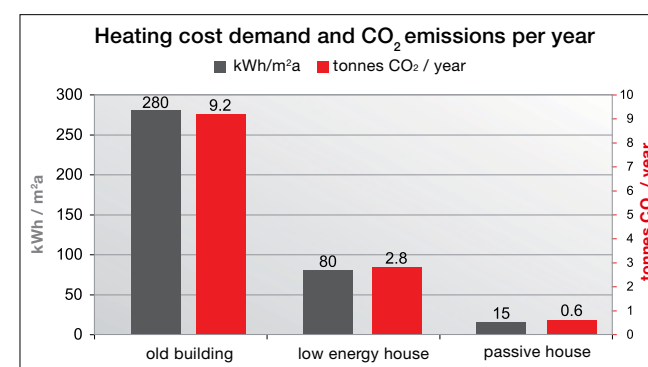
- Highly thermally insulating glazing
- Highly thermally insulating frame
- Thermally optimised edge seal
- Expert installation, thermally optimised

What is important for passive houses

One of the major characteristics is the utilisation of existing energy – minimising thermal losses and at the same time optimising thermal gain, are the basic principles. Merely combining passive house certified components is not enough to reach a passive house construction standard:

The whole thing is more than the sum of its parts – mutual interactions between the distinct components necessitate integral planning to fulfil three basic demands:

- Heating demand $< 15 \text{ kWh/m}^2\text{a}$
- Primary energy demand (heating/hot water/house appliances) $< 120 \text{ kWh/m}^2\text{a}$
- Pressure difference heat exchange $n_{50} < 0.6 \text{ h}^{-1}$, i.e. at a pressure difference of 50 pascal the air flow must be less than 60 % of the building's volume per hour



The passive house needs a tight highly thermally insulating outside shell and a controlled house ventilation with heat recovery. This plays a key role with passive houses. It ensures hygienic air and takes away humidity and smells from where they arise. If you were to achieve this with airing via the windows, the resulting heat losses would be greater than the overall heating demand. Therefore, controlled house ventilation is indispensable for passive houses. It reduces ventilation heat loss considerably as the energy of the used air is utilized to prewarm the fresh air. This energy would be irreversibly lost with conventional airing. Fresh air enters into the house via living room, bed room and children's rooms and will be sucked off in kitchen, bathroom and toilet so that unpleasant smells do not spread around the house.

The UPVC or UPVC/aluminium window KF 410 as well as the timber/aluminium window HF 310 are already in their standard version shown to be best suited for passive houses. They were tested and passive house certified at the independent institute ift Rosenheim as well as at the TU Graz.



Dobratsch summit house 2143 m, Transform Architekten ZT-GmbH, Architekt DI Günter Weratschnig

CHECKLIST FOR YOUR WINDOW PURCHASE

Reasons for window purchase	<input type="checkbox"/> New building	<input type="checkbox"/> Refurbishment
Type of building	<input type="checkbox"/> Single family house or block of flats	<input type="checkbox"/> Passive house
	<input type="checkbox"/> Low energy house	
Selection of frame material	<input type="checkbox"/> Timber/aluminium	<input type="checkbox"/> UPVC/aluminium
	<input type="checkbox"/> Combination UPVC/aluminium and timber/aluminium	<input type="checkbox"/> UPVC
Window designs	<input type="checkbox"/> Shapes (rectangle, round arch, angular construction, bespoke constructions etc.) <input type="checkbox"/> Fixed elements <input type="checkbox"/> Window divisions: one sash or several sashes, fanlight <input type="checkbox"/> Colours (all RAL colours, timber decor, metallic decor, stainless steel colours, timber colours etc.) <input type="checkbox"/> Glass <input type="checkbox"/> Georgian/feature bars (divisions, types etc.) <input type="checkbox"/> Handles	
Opening types	<input type="checkbox"/> Turn-tilt	<input type="checkbox"/> Sliding
	<input type="checkbox"/> Turn	<input type="checkbox"/> Folding-sliding
	<input type="checkbox"/> Tilt	<input type="checkbox"/> Lockable doors
	<input type="checkbox"/> Fixed glazed	<input type="checkbox"/> Outward opening doors
	<input type="checkbox"/> Lift-sliding	
Products “all around the window“	<input type="checkbox"/> Integr. sun and privacy protection = windows with integrated blinds <input type="checkbox"/> Sun and privacy protection (roller shutters, Venetian blinds, window shutters, inside blinds, photovoltaic blinds, Venetian blinds & Duette®) <input type="checkbox"/> Insect protection <input type="checkbox"/> Burglary protection <input type="checkbox"/> Additional features such as fully integrated ventilation, child proof lock, tread guard, closing protection, security glass. <input type="checkbox"/> Designer handles <input type="checkbox"/> Entrance doors	
Thermal insulation	<input type="checkbox"/> Energy saving potential: saved heating costs due to highly thermally insulating windows. Calculate it simply and quickly with the energy saving calculator from Internorm at www.internorm.com <input type="checkbox"/> Passive house suitable thermal insulation $U_w \sim 0.8 \text{ W/m}^2\text{K}$ <input type="checkbox"/> Low energy house suited thermal insulation $U_w = 0.8 \text{ up to } 1.0 \text{ W/m}^2\text{K}$ <input type="checkbox"/> Increased thermal insulation $U_w = 1.0 \text{ up to } 1.2 \text{ W/m}^2\text{K}$ <input type="checkbox"/> Standard version $U_w = 1.2 \text{ up to } 1.3 \text{ W/m}^2\text{K}$	
Soundproofing	<input type="checkbox"/> High noise level (e.g. airport, railway tracks, heavily frequented roads) – needs soundproofing with $R_w = \text{over } 40 \text{ dB}$ <input type="checkbox"/> Medium noise level (e.g. normal road traffic, longer distances from sound sources) – needs soundproofing with $R_w = 36 \text{ up to } 39 \text{ dB}$ <input type="checkbox"/> Low noise level (e.g. rural housing) – needs soundproofing with $R_w = 32 \text{ up to } 35 \text{ dB}$	

Which ventilation options do I need?	<div><input type="checkbox"/> Continuous ventilation with or without fan</div> <div><input type="checkbox"/> Fully integrated ventilation</div> <div><input type="checkbox"/> Night-vent ventilation</div> <div><input type="checkbox"/> Manual opening of windows (turn/tilt)</div>
Fitting of windows	<div><input type="checkbox"/> Qualified specialist fitting with good practise standards (e.g. ÖNORM, RAL etc.)</div> <div><input type="checkbox"/> Planning of fitting with good practise standards – together with Internorm distribution partner</div>
Care and maintenance	<div><input type="checkbox"/> Maintenance contract with qualified Internorm distribution partner</div> <div><input type="checkbox"/> Maintenance through personal contribution</div> <div><input type="checkbox"/> Observation of Internorm handbook/warranty, care and maintenance</div>
Window quotes - When comparing always observe this:	<div><div><div><input type="checkbox"/> Window measurements</div><div><input type="checkbox"/> Glazing</div><div><input type="checkbox"/> Hardware</div><div><input type="checkbox"/> Construction depth</div><div><input type="checkbox"/> Accessories</div><div><input type="checkbox"/> Surface version</div></div><div><div><input type="checkbox"/> Thermal & sound insulation values (test certificates)</div><div><input type="checkbox"/> Number of gaskets</div><div><input type="checkbox"/> Design</div><div><input type="checkbox"/> Certification mark</div><div><input type="checkbox"/> Integrated technologies</div></div></div>
Warranty services	<div><input type="checkbox"/> On profiles (discolouration, cracks, condensation on insulating glass)</div> <div><input type="checkbox"/> On surfaces</div> <div><input type="checkbox"/> On glazing</div> <div><input type="checkbox"/> On function</div> <div><input type="checkbox"/> Reliability of the window manufacturer as warrantor</div> <div><input type="checkbox"/> Market brand as security</div>
Which services can I expect?	<div><input type="checkbox"/> Measuring of windows</div> <div><input type="checkbox"/> Detailed, transparent quotes with images</div> <div><input type="checkbox"/> Fitting</div> <div><input type="checkbox"/> Maintenance</div> <div><input type="checkbox"/> Others</div>
Please note:	<div><input type="checkbox"/> Local construction regulations</div> <div><input type="checkbox"/> Adherence to possible design templates</div> <div><input type="checkbox"/> Funding</div> <div><input type="checkbox"/> Delivery timescale</div>
Price/performance ratio regards personal demands:	<div><input type="checkbox"/> Manufacturing quality</div> <div><input type="checkbox"/> Comprehensive warranties and longevity</div> <div><input type="checkbox"/> Maximum energy efficiency – optimum thermal insulation – low heating costs</div> <div><input type="checkbox"/> Climate protection: low CO₂ emission through better thermal insulation</div> <div><input type="checkbox"/> Burglary protection</div> <div><input type="checkbox"/> Uncomplicated care and maintenance</div> <div><input type="checkbox"/> Cost effective care and maintenance</div> <div><input type="checkbox"/> Quick amortisation of the investment</div> <div><input type="checkbox"/> Value retention for decades</div>

☐ Glazing ☐ Number of gaskets |☐ Hardware ☐ Design |☐ Construction depth ☐ Certification mark |☐ Accessories ☐ Integrated technologies |☐ Surface version |



WARRANTIES

WE GUARANTEE YOU MANY YEARS OF PLEASURE WITH YOUR INTERNORM WINDOWS.

As Europe's leading and largest active international window brand, Internorm looks back on over 80 years of experience in trendsetting window and door solutions of exceptional reliability and longevity. This, we can guarantee you.



WARRANTIES

Warranty	10 YEARS	<ul style="list-style-type: none">■ No unnatural colour changes or cracked surfaces due to weather influences for white window and door profiles made of UPVC, with the exception of mitre cracks.■ No unnatural colour changes or cracked inside surfaces due to weather influences for foil-coated window and door profiles made of UPVC, with the exception of mitre cracks.■ No unnatural colour changes or cracked surfaces due to weather influences for anodised or powder coated window and door profiles made of aluminium.■ No condensation between the panes of insulating glass.■ The function of the timber, thermal foam and aluminium profile compounds is guaranteed for all Internorm timber/aluminium window systems, provided that the Internorm installation and maintenance guidelines have been adhered to.■ The function of the adhesive and the sealing of insulation glass panes with the window profiles is guaranteed for all Internorm timber/aluminium window systems, provided that the Internorm installation and maintenance guidelines have been adhered to.■ The glue connection of glued Georgian/feature bars.
Warranty	5 YEARS	<ul style="list-style-type: none">■ PVD coated door handles are guaranteed against corrosion if there is no mechanical change.■ No unnaturar colour changes or surface cracks due to weather influences in door fillings. There is no guarantee for changes in the surface appearance as a result of dirt.
Warranty	3 YEARS	<ul style="list-style-type: none">■ No unnatural colour changes or surface cracks due to weather influences for roller shutter profiles made of UPVC.■ No unnatural colour changes or surface cracks due to weather influences for anodised or powder coated roller shutter and blind profiles made of aluminium.■ The function of the window or door fitting is guaranteed, provided that the Internorm installation and maintenance guidelines have been adhered to.
Assurance	30 YEARS	<p>Furthermore, Internorm guarantees safe-guarding that Internorm products can be repeatedly serviced by our experts in such a fashion (original parts not obligatory), to retain their full function for a period of 30 years. However, this presupposes the frame construction (frame and sash) is not damaged. The 30-year period starts from the production date. The services required to maintain the functionality, including the materials required, labour etc. will be invoiced according to the currently valid rates.</p>

Warranties / extract: The full wording of our warranty conditions, the exact preconditions for the application of the warranty, and what you should do in the event of a claim, can be found in the Internorm Maintenance Care and Warranties Manual. You will receive this booklet when your Internorm products are delivered. In addition, it is obtainable from any Internorm distribution partner.



NATIONAL AND INTERNATIONAL CERTIFICATIONS CONFIRM THE HIGH QUALITY OF OUR PRODUCTS.

Our know-how gives you the security that you receive best service for your money. The most modern production facilities and strictest quality controls ensure quality which is setting standards all over Europe. Awards of independent test institutes from all over Europe are confirming this.



Austrian State Emblem



Austrian Quality Label



CE Certification



TÜV



Institute for Window Technology Rosenheim



Plus X Award



RAL Quality Seals



Federal Ministry for Traffic, Innovation and Technology



Technical University Graz



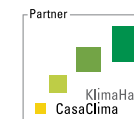
Minergie® Certificate



Austrian Society for Environment Simulation



Certificate for Sustainable Forest Management



KlimaHaus Certificate



Interest Group Passive House Austria



Energy Globe (Projekt Schiestlhaus)



Climate Association Town Traun



Official Police Security Initiative



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