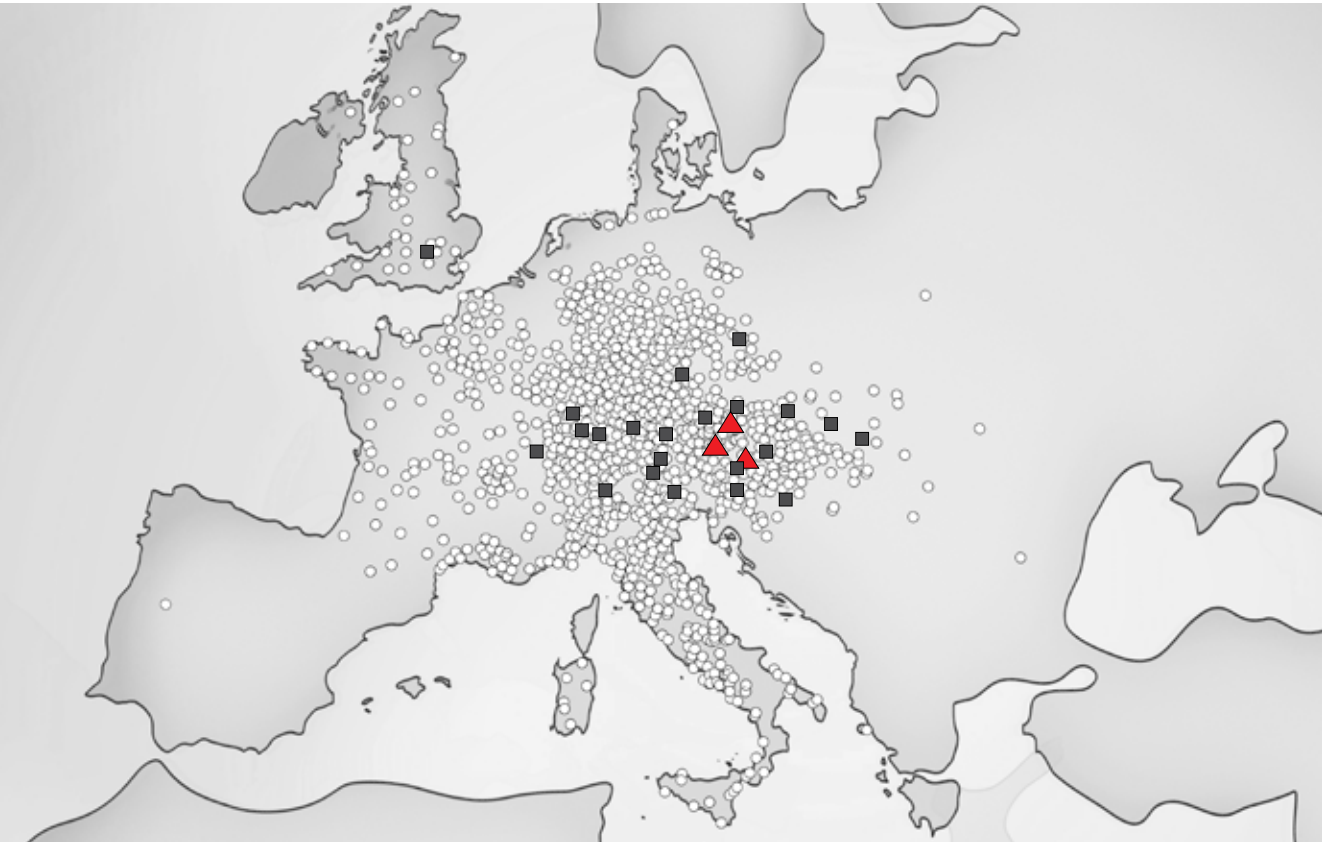




# **WINDOWS**

Highlights of Architecture

2014/15







# EUROPE'S NO. 1 WINDOW BRAND

Already more than 20 million window and door units which are 100 % made in Austria, have been manufactured in our three production facilities in Traun, Sarleinsbach and Lannach. From the birth of the UPVC window and the production of timber/aluminium windows to today's high tech and high design innovations, our family company has been setting standards all over Europe. As a pioneer in the

field, we are continuously further developing in technology and new innovative ideas. Our 1900 employees across Europe are specialists who love attention to detail and act with much passion and inventiveness. Together, with more than 1250 distribution partners in 20 countries we can guarantee you perfect product quality with high service competence.

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





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## Accessories

-  Handles
-  Sun protection
-  Colours
-  Large-scale elements

## Comfort

-  Thermal insulation
-  Sound protection
-  Security
-  Locking



# WE CAN OFFER YOU ...

QUALITY MADE IN AUSTRIA



**Traun/Upper Austria**  
UPVC window production, insulating glass production and aluminium production



**Sarleinsbach/Upper Austria**  
UPVC window and insulating glass production, extrusion



**Lannach/Styria**  
Timber/aluminium production

### INDIVIDUAL WINDOWS

Each window is a unique specimen, because each Internorm window is custom made in our ultra-modern manufacturing sites in Upper Austria or Styria according to your individual ideas. You decide if you would like to use UPVC, UPVC/aluminium or timber/aluminium windows in your property. A combination of materials is also available.

### MODERN TECHNOLOGY

Excellent thermal insulation and soundproofing values are natural with Internorm windows. Multiple passive house certificates are proof of this. Our company research and developing department is continuously creating new technologies to offer you even more comfort and security.

### DIVERSE DESIGN

Internorm is offering the right window for each design style. Do you feel more at home with the studio style or are you rather an ambiente type? Whatever – we are offering you almost unlimited design possibilities with our flush windows, frameless fitting, profiled or rounded sash designs as well as a large selection of colours, Georgian/feature bars and accessories.

### PERFECT COMBINABILITY

Would you prefer a UPVC/aluminium window in the ba-

throom, but you would also like timber/aluminium windows in the living room? Perfect with Internorm these can be combined well with each other. Your window design and therefore the exterior design of your house will remain identical. For the inside you can create the window for each room according to your requirements, either in UPVC or timber.

### COMPETENT PARTNERS

We have developed a unique way to look after our customers with the Customer Care Program. We are only satisfied, if you are. Over 1250 distribution partners in 20 countries guarantee you reliable advice and customer care. We respond to your individual wishes, advice you professionally, take required original measurements in your home and produce a fair and clear quote.

### PROFESSIONAL FITTING

Would you also like to rely on perfect window fitting? With our distribution partners you are in the experts hands. A competent fitting team with certified fitting experts will guarantee you professional and clean fitting, according to the usual standards. After the completed fitting they will check all windows together with you for full functioning and you will receive valuable tips for maintenance and care.



From left to right: Mag. Christian Klinger,  
Mag. Anette Klinger, DI (FH) Stephan Kubinger, MBA

### INTERNORM IN EUROPE

Our family company is the market leader in Europe with 1900 employees and 1250 distribution partners all over Europe, with more than 80 years of experience and more than 20 million produced window and door units since its foundation.

### INTERNORM IN TECHNOLOGY

We aspire to the most modern manufacturing technologies. Our own unparalleled manufacturing depth in our window and door production causes to a large extent, independence over system producers. Profile extrusion, insulating glass production and sun protection production, all 100 % made in Austria, are evidence to this claim.

### INTERNORM IN QUALITY

We can offer a large range of highly thermally insulating low energy and passive house windows and have multiple passive house certifications.

### INTERNORM IN INNOVATIONS

For decades we have been setting standards Europe-wide with our trendsetting window and door solutions. We are considered to be the trendsetter in the window and door branch.

### INTERNORM IN COMPETENCE

The high number of international and national awards and certifications is evidence to our leading role in product development and manufacturing of the most modern windows and doors. We are closely and professionally looking after our distribution partners with the highest competence for sustainable market development.

### INTERNORM IN SERVICE

Buying windows and doors is a matter of trust. The Internorm [1<sup>st</sup>] window partners are fulfilling the 12 Internorm Customer Care Standards and are therefore guaranteeing clear, understandable and constant services which bring excitement.



# DesignStyles

Highlights of architecture

The architecture of a building reflects the people who live in it. Internorm is connecting people and buildings and can therefore offer individual styles of living to suit each need. With Internorm windows and doors you can fulfil your desires to have your ultimate dream house.

To help you find a window solution which meets your criteria for architecture, design and comfort perfectly amidst the many possibilities in shape, colour and material, you can choose from three different Internorm design styles: [studio](#), [home](#) and [ambiente](#).

Therefore 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 modern feel.

from page 12 onward



## home

### pure

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

from page 28 onward



### soft

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

from page 42 onward



## ambiente
















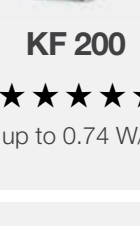
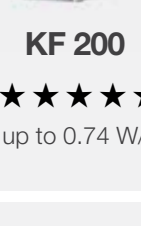
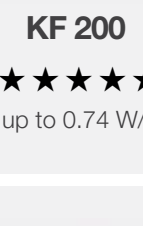
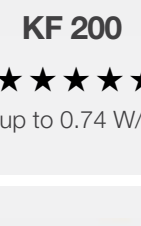
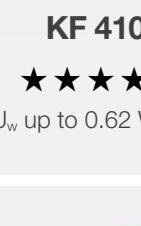





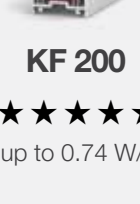
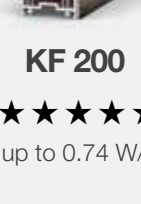
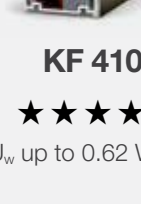
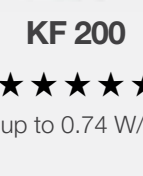
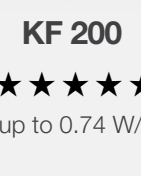





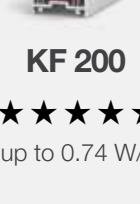
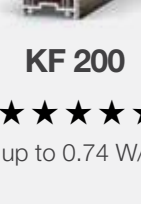
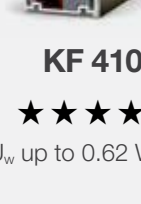
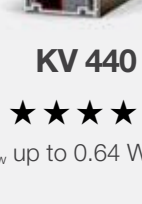
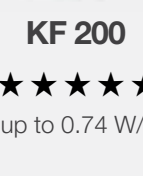
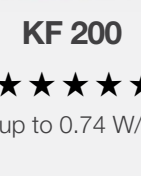
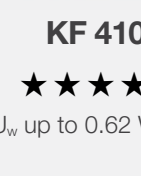
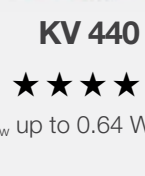
**ambiente** stands out with its traditional shapes – timeless classical and elegant. Its composition is elaborately designed and conveys a homely feel.
















from page 56 onward







Styles/windows		UPVC		UPVC/aluminium		
studio		 <b>KF 220</b> ★★★★★ U <sub>w</sub> up to 0.67 W/m²K		 <b>KF 220</b> ★★★★★ U <sub>w</sub> up to 0.67 W/m²K	 <b>KF 410</b> ★★★★★ U <sub>w</sub> up to 0.62 W/m²K	 <b>KV 440</b> ★★★★★ U <sub>w</sub> up to 0.64 W/m²K
		 <b>KF 500</b> ★★★★★ U <sub>w</sub> up to 0.61 W/m²K	 <b>KF 410</b> ★★★★★ U <sub>w</sub> up to 0.62 W/m²K	 <b>KF 500</b> ★★★★★ U <sub>w</sub> up to 0.61 W/m²K	 <b>KF 410</b> ★★★★★ U <sub>w</sub> up to 0.62 W/m²K	 <b>KF 200</b> ★★★★★ U <sub>w</sub> up to 0.74 W/m²K
home pure		 <b>KF 410</b> ★★★★★ U <sub>w</sub> up to 0.62 W/m²K	 <b>KF 200</b> ★★★★★ U <sub>w</sub> up to 0.74 W/m²K	 <b>KF 200</b> ★★★★★ U <sub>w</sub> up to 0.74 W/m²K	 <b>KF 410</b> ★★★★★ U <sub>w</sub> up to 0.62 W/m²K	 <b>KV 440</b> ★★★★★ U <sub>w</sub> up to 0.64 W/m²K
		 <b>KF 410</b> ★★★★★ U <sub>w</sub> up to 0.62 W/m²K	 <b>KF 200</b> ★★★★★ U <sub>w</sub> up to 0.74 W/m²K	 <b>KF 200</b> ★★★★★ U <sub>w</sub> up to 0.74 W/m²K	 <b>KF 410</b> ★★★★★ U <sub>w</sub> up to 0.62 W/m²K	 <b>KV 440</b> ★★★★★ U <sub>w</sub> up to 0.64 W/m²K
home soft		 <b>KF 410</b> ★★★★★ U <sub>w</sub> up to 0.62 W/m²K	 <b>KF 200</b> ★★★★★ U <sub>w</sub> up to 0.74 W/m²K	 <b>KF 200</b> ★★★★★ U <sub>w</sub> up to 0.74 W/m²K	 <b>KF 410</b> ★★★★★ U <sub>w</sub> up to 0.62 W/m²K	 <b>KV 440</b> ★★★★★ U <sub>w</sub> up to 0.64 W/m²K
		 <b>KF 410</b> ★★★★★ U <sub>w</sub> up to 0.62 W/m²K	 <b>KF 200</b> ★★★★★ U <sub>w</sub> up to 0.74 W/m²K	 <b>KF 200</b> ★★★★★ U <sub>w</sub> up to 0.74 W/m²K	 <b>KF 410</b> ★★★★★ U <sub>w</sub> up to 0.62 W/m²K	 <b>KV 440</b> ★★★★★ U <sub>w</sub> up to 0.64 W/m²K
ambiente		 <b>KF 410</b> ★★★★★ U <sub>w</sub> up to 0.62 W/m²K	 <b>KF 200</b> ★★★★★ U <sub>w</sub> up to 0.74 W/m²K	 <b>KF 200</b> ★★★★★ U <sub>w</sub> up to 0.74 W/m²K	 <b>KF 410</b> ★★★★★ U <sub>w</sub> up to 0.62 W/m²K	 <b>KV 440</b> ★★★★★ U <sub>w</sub> up to 0.64 W/m²K
		 <b>KF 410</b> ★★★★★ U <sub>w</sub> up to 0.62 W/m²K	 <b>KF 200</b> ★★★★★ U <sub>w</sub> up to 0.74 W/m²K	 <b>KF 200</b> ★★★★★ U <sub>w</sub> up to 0.74 W/m²K	 <b>KF 410</b> ★★★★★ U <sub>w</sub> up to 0.62 W/m²K	 <b>KV 440</b> ★★★★★ U <sub>w</sub> up to 0.64 W/m²K

Styles/windows	Timber/aluminium
<div>studio</div> <div></div>	<div></div> <div><div>HF 310</div><div>★★★★★</div><div>U<sub>w</sub> up to 0.62 W/m²K</div><div>HV 350</div><div>★★★★★</div><div>U<sub>w</sub> up to 0.68 W/m²K</div></div>
<div>home pure</div> <div></div>	<div></div> <div><div>HF 210</div><div>★★★★★</div><div>U<sub>w</sub> up to 0.67 W/m²K</div><div>HF 310</div><div>★★★★★</div><div>U<sub>w</sub> up to 0.62 W/m²K</div><div>HV 350</div><div>★★★★★</div><div>U<sub>w</sub> up to 0.68 W/m²K</div></div>
<div>home soft</div> <div></div>	<div></div> <div><div>HF 210</div><div>★★★★★</div><div>U<sub>w</sub> up to 0.67 W/m²K</div><div>HF 310</div><div>★★★★★</div><div>U<sub>w</sub> up to 0.62 W/m²K</div><div>HV 350</div><div>★★★★★</div><div>U<sub>w</sub> up to 0.68 W/m²K</div></div>
<div>ambiente</div> <div></div>	<div></div> <div><div>HF 210</div><div>★★★★★</div><div>U<sub>w</sub> up to 0.67 W/m²K</div><div>HF 310</div><div>★★★★★</div><div>U<sub>w</sub> up to 0.62 W/m²K</div><div>HV 350</div><div>★★★★★</div><div>U<sub>w</sub> up to 0.68 W/m²K</div></div>







# studio

## IDEAL FOR THE INDIVIDUALIST

Clear shapes and diminished appearance of **studio windows** fit perfectly with the architecture of your building. The mostly surface-flush systems emphasize your minimalistic living style and can be integrated completely into the brickwork – only the glass pane remains visible.

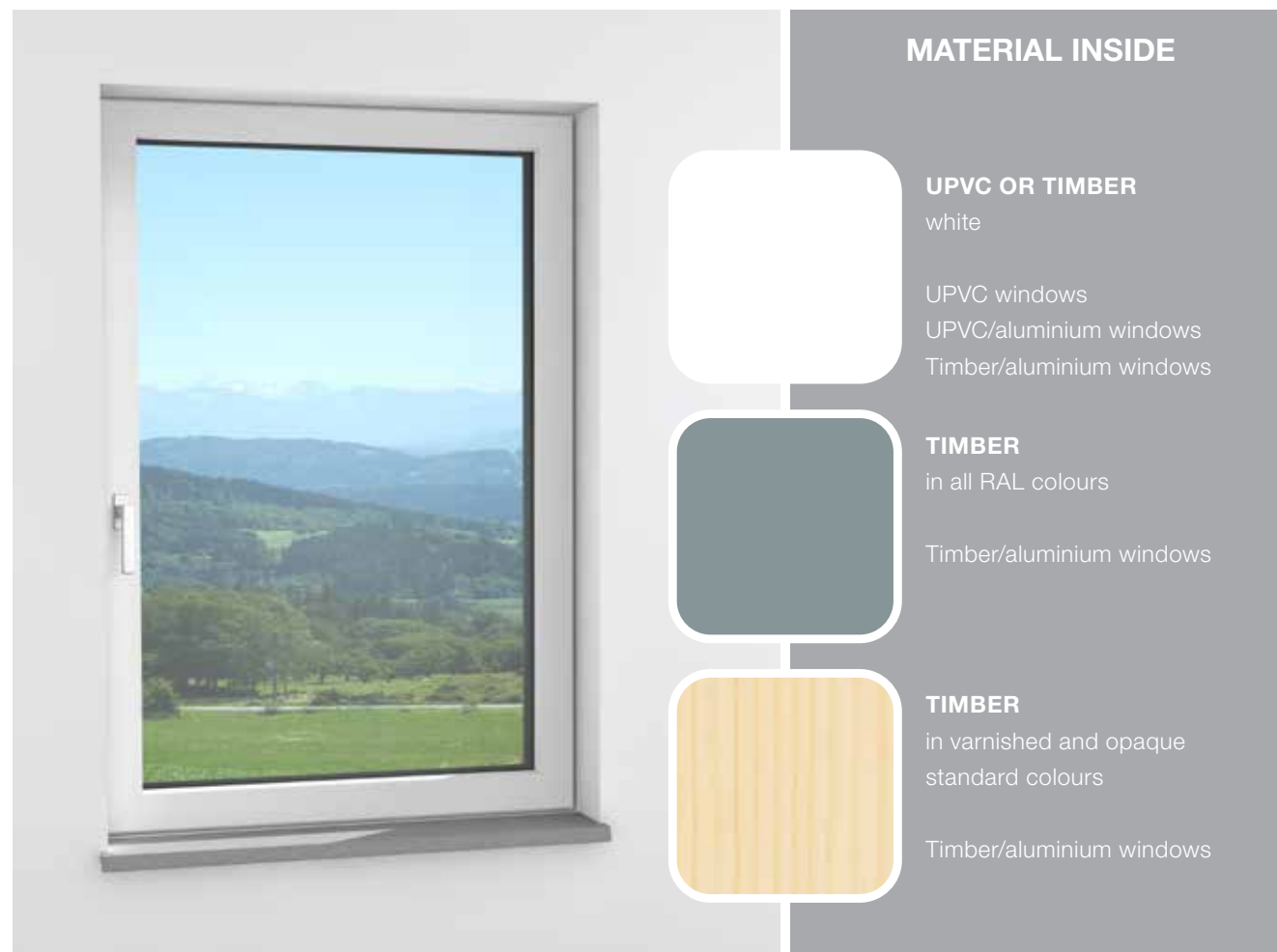
There are no limits to your creativity – surfaces and colours can also be chosen according to your individual taste. Also available in the **studio accessories**: Handles, sun and insect protection, colours and large-scale elements.

All **studio windows** in the materials timber/aluminium, UPVC/aluminium and UPVC can be found under **studio comfort**.

Enjoy interesting insights and views under the **studio style** section!







## VIEW FROM THE INSIDE

You can create your perfect unique space for your self-fulfilment and the ideal environment to relax and withdraw from your everyday work. [studio](#) stands for a high standard of living and conveys a more unique attitude towards life.

### Individualisation

[studio](#) windows stand out through clear structures of interior architecture – highlight your unique style with surfaces and colours!

### Surfaces

Choose between long-lasting UPVC and natural timber in a wide range of colours.

### Colours

The colour range – matching your [studio](#) window – can be found on page 21. An overview of all colours can be found on page 114.

## VIEW FROM THE OUTSIDE

You see yourself as a trendsetter and possess a high affinity to technological progress. [studio](#) underlines your exclusive life style – make your individual requirements come true! With UPVC and UPVC/aluminium [studio](#) windows there is no difference in the outside view between fixed glazing and sash versions.

### Individualisation

[studio](#) windows fit perfectly into the architecture of your home – highlight your individual style with surfaces and colours!

### Surfaces







Choose between long-lasting UPVC and weather-resistant aluminium in a wide range of colours and rich timber shades.

### Colours

The colour range – matching your [studio](#) window – can be found on page 21. An overview of all colours can be found on page 114.

### Fitting possibilities

[studio](#) windows allow for frameless architecture – this means rendered on three sides into the brickwork (with KF 405), classic architecture – fitting with completely invisible window frames with narrow view widths and modern refurbishment styled sash/frames.

Material		Timber/aluminium			UPVC/aluminium			UPVC
								
		HF 310	HV 350		KF 220	KF 410	KV 440	KF 220
Thermal insulation (in W/m²K)		★★★★★	★★★★★		★★★★★	★★★★★	★★★★★	★★★★★
Coating LIGHT/SOLAR+		U <sub>w</sub> = 0.69 / 0.77	U <sub>w</sub> = 0.99 / n.a.		U <sub>w</sub> = 0.74 / 0.81	U <sub>w</sub> = 0.72 / 0.79	U <sub>w</sub> = 0.78 / 0.85	U <sub>w</sub> = 0.78 / 0.86
Best value		U <sub>w</sub> = 0.62	U <sub>w</sub> = 0.68		U <sub>w</sub> = 0.67	U <sub>w</sub> = 0.62	U <sub>w</sub> = 0.64	U <sub>w</sub> = 0.67
Soundproofing (in dB)		★★★★★	★★★★★		★★★★★	★★★★★	★★★★★	★★★★★
		33 – 46	41 – 45		35 – 43	34 – 45	39 – 45	35 – 43
Security		★★★★★	★★★★★		★★★★★	★★★★★	★★★★★	★★★★★
		RC2	RC2		RC1, RC2	RC1, RC2	RC1, RC2	RC1, RC2
Locking		★★★★★	★★★★★		★★★★★	★★★★★	★★★★★	★★★★★
		concealed	concealed		concealed	concealed	concealed	concealed
Dimensions mm								
Frame construction depth		85	85		71	93	93	68
View width frame/sash		114	114		98	113	118	98
View width flying mullion (2 sashes)		134	134		100	133	144	100
View width transom (2 sashes)		173	173		154	187	198	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	3	3	3
Bead gasket colour outside		black	black		black	black	black	black



Handles



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



**Standard handle G80**  
flat key hole cover plate  
Part no. 36423

**Standard handle G80**  
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:** 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

**Attachment 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 studio window. The complete colour range can be found in the overview from page 114 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 and lift-sliding doors, which includes corner solutions in all-glass versions, XL size up to 12 m wide and 17 m² glass area.



## KF 220

UPVC &  
UPVC/ALUMINIUM WINDOW

### TECHNICAL DATA:

- 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
- 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
- Narrow view width up to 98 mm
- FIX-O-ROUND Technology
- Triple gasket system
- Standard security
- Shortened aluminium attachment clad available upon request, for thermo-technical optimised construction connection

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:

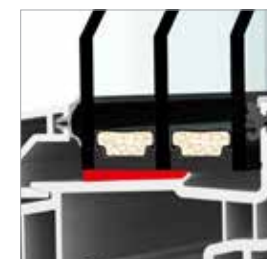
- Thermal insulation** Thermal insulation with standard triple glazing and highly insulating edge seal  
( $U_g = 0.5 \text{ W/m}^2\text{K}$ )  $U_w = 0.72 \text{ W/m}^2\text{K}$
- For best energy efficiency SOLAR+ glazing ( $U_g = 0.6 \text{ W/m}^2\text{K}$  and g value 62 %)  $U_w = 0.79 \text{ W/m}^2\text{K}$
- Sound insulation** Soundproofing up to 45 dB  
(with corresponding glazing)
- System description** 90 mm construction depth
- Can be combined with timber/ aluminium windows
- Fully concealed hardware
- Visible or concealed drainage
- Shortened aluminium attachment clad available upon request, for thermo-technical optimised construction connection
- Triple gasket system
- FIX-O-ROUND Technology
- Standard security
- 5 chamber system with highly thermally insulating thermal foam (HCFC, HCF and FC free)
- I-tec ventilation available upon request
- Passive house certified in the standard version acc. to ift Rosenheim

I-tec



### FLUSH DESIGN

Modern square-edged design outside and inside, can be integrated into the facade on three sides.



### 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

Continuous fresh air for the whole room and your well being. Uncontrolled airing leads to energy losses. The I-tec ventilation is equipped with a heat exchanger. Heat recovery reduces the energy losses to a minimum.



## KV 440

### UPVC/ALUMINIUM WINDOW WITH INTEGRATED BLIND

<b>Thermal insulation</b>	<b>TECHNICAL DATA:</b>
	Thermal insulation with standard quadruple glazing ( $U_g = 0.60 \text{ W/m}^2\text{K}$ ) $U_w = 0.78 \text{ W/m}^2\text{K}$
	Best thermal insulation <b><math>U_w</math> up to <math>0.64 \text{ W/m}^2\text{K}</math></b> (with corresponding glazing)
<b>Sound insulation</b>	Soundproofing up to 45 dB (with corresponding glazing)
<b>System description</b>	93 mm construction depth
	Can be combined with timber/ aluminium windows
	Sun and privacy protection integrated between the panes and therefore protected – available with I-tec shading upon request
	Fully concealed hardware
	Highly thermally insulating thermal foam (HCFC, HCF and FC free)
	FIX-O-ROUND Technology
	Visible or concealed drainage
	Triple gasket system
	Shortened aluminium attachment clad available upon request, for thermo-technical optimised construction connection
	Gasket colour outside black or light grey
	I-tec ventilation available upon request

I-tec



#### QUADRUPLE PROTECTION

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



#### MODERN GLASS APPEARANCE

With this innovative composite window 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.

## HV 350

### TIMBER/ALUMINIUM WINDOW WITH INTEGRATED BLIND

<b>Thermal insulation</b>	<b>TECHNICAL DATA:</b>
	Thermal insulation with standard triple glazing ( $U_g = 0.90 \text{ W/m}^2\text{K}$ ) $U_w = 0.99 \text{ W/m}^2\text{K}$
	Best thermal insulation at low weight <b><math>U_w</math> up to <math>0.68 \text{ W/m}^2\text{K}</math></b> (with 3light glazing) – passive house certified
<b>Sound insulation</b>	Soundproofing up to 45 dB (with corresponding glazing)
<b>System description</b>	85 mm construction depth
	Modern interior design with square-edged sash
	Sun and privacy protection integrated between the panes and therefore protected – available with I-tec shading upon request
	Fully concealed hardware
	Highly thermally insulating thermal foam (HCFC, HCF and FC free)
	Quadruple glazing available upon request – passive house certified
	FIX-O-ROUND TEchnology
	Visible or concealed drainage
	Triple gasket system
	Frameless sash facilitates easier cleaning and maintenance
	Standard security

I-tec



#### MODERN GLASS APPEARANCE

With this innovative composite window 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.



#### OPTIMUM DIMMING

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



#### 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 310 TIMBER/ALUMINIUM WINDOW

### TECHNICAL DATA:

- 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  $U_g = 0.6 \text{ W/m}^2\text{K}$  and g value 62 %
- Sound insulation** Soundproofing up to 46 dB
- System description** 85 mm construction depth  
Classic, square-edged and straight exterior and interior design  
Highly thermally insulating thermal foam (HCFC, HCF and FC free)  
Fully concealed hardware  
Visible or concealed drainage  
Standard security  
Triple gasket system  
In the standard version suitable for passive houses acc. to TU Graz

I-tec



### INGENIOUS GLAZING SYSTEM

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



### FLUSH DESIGN

Modern square-edged design outside and inside, integration into the facade possible on three sides.



### TRIPLE GASKET SYSTEM

Three continuous gasket levels without interruption ensure high impermeability.





# home

This style provides a beautiful living environment with a harmonic, pleasant atmosphere. For people who like to create a more open living space for all their ideas. After all – home is best and most beautiful. One of the most important aims in life is to create your own home with your very own ideas.

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 and your family 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.

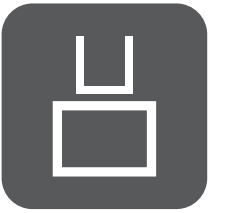


home pure



home soft





# home pure

## IDEAL FOR THE PURIST

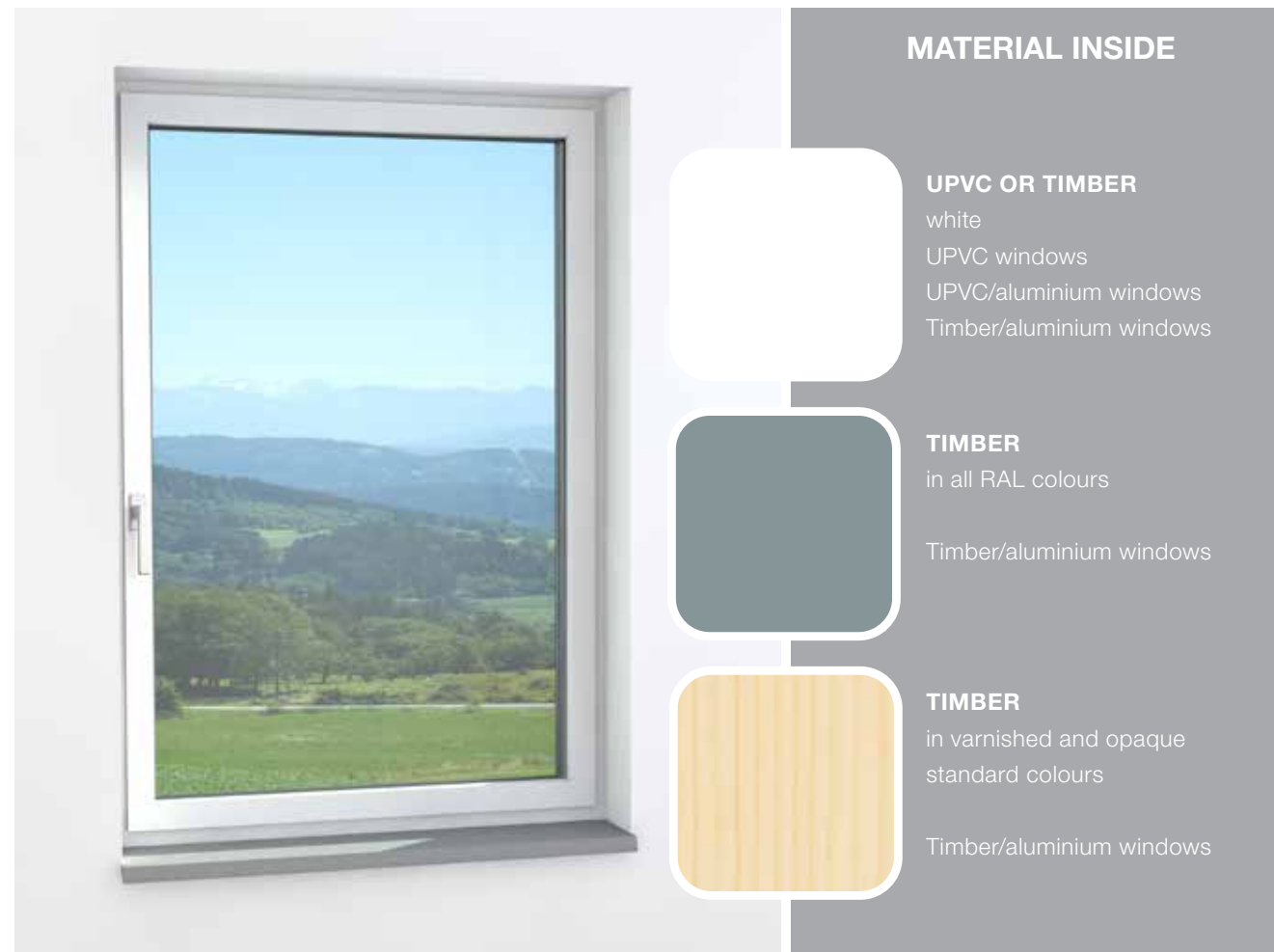
The straight-lined, square shapes and modern design of the **home pure windows** underline the architecture of your building. The surface-offset systems adapt perfectly to your purist style of living.

There are no limits to your creativity – surfaces and colours allow plenty of room for individualisation. Also available in the **home pure accessories**: Handles, sun and insect protection, colours and large-scale elements. All home pure windows made of timber/aluminium, UPVC/aluminium and UPVC can be found under **home pure comfort**.

Enjoy interesting insights and views while exploring the **home pure style** section!







## VIEW FROM THE INSIDE

The straight-lined shapes of the **home pure** windows meet your demands of pure aesthetics. **home pure** stands for a high standard of living and reinforces your individual attitude to life.

### Individualisation

**home pure** windows stand out through their square structures in interior architecture – highlight your unique style with surfaces and colours!

### Surfaces

Choose between long-lasting UPVC and natural timber in a wide range of colours.

### Colours

The colour range – matching your **home pure** window – can be found on page 39. An overview of all colours can be found on page 114.



## VIEW FROM THE OUTSIDE

As a purist you place great importance on a high quality of life and possess a distinct awareness of style. **home pure** windows underline your active life style – make your purest dreams come true!

### Individualisation












**home pure** windows fit perfectly into the architecture of your home – highlight your individual style with surfaces and colours!

### Surfaces

Choose between long-lasting UPVC and weather-resistant aluminium in a wide range of colours and rich timber shades.

### Colours

The colour range – matching your **home pure** window – can be found on page 39. An overview of all colours can be found on page 114.

Material		UPVC			UPVC/aluminium				
									
		KF 500	KF 410		KF 500	KF 410	KF 200	KV 240	KV 440
Thermal insulation (in W/m²K)		★★★★★ U <sub>w</sub> = 0.69 / 0.76	★★★★★ U <sub>w</sub> = 0.72 / 0.79		★★★★★ U <sub>w</sub> = 0.69 / 0.76	★★★★★ U <sub>w</sub> = 0.72 / 0.79	★★★★★ U <sub>w</sub> = 0.88 / 0.95	★★★★★ U <sub>w</sub> = 1.1 / -	★★★★★ U <sub>w</sub> = 0.77 / 0.84
Coating LIGHT/SOLAR+									
Best value		U <sub>w</sub> = 0.61	U <sub>w</sub> = 0.62		U <sub>w</sub> = 0.61	U <sub>w</sub> = 0.62	U <sub>w</sub> = 0.74	U <sub>w</sub> = 0.80	U <sub>w</sub> = 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+		U <sub>w</sub> = 0.90 / 0.96	U <sub>w</sub> = 0.69 / 0.77	U <sub>w</sub> = 0.99 / n.a.
Best value		U <sub>w</sub> = 0.67	U <sub>w</sub> = 0.62	U <sub>w</sub> = 0.68
Soundproofing (in dB)		★★★★★	★★★★★	★★★★★
		33 – 46	33 – 46	41 – 45
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. More attractive designer handles are available from your Internorm distribution partner!



**Standard handle G80**  
flat key hole cover plate  
Part no. 36423

**Standard handle G80**  
Part no. 36404



**Standard handle G80**  
lockable  
Part no. 36400

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



**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



**Attachment 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

**Attachment 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 114 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

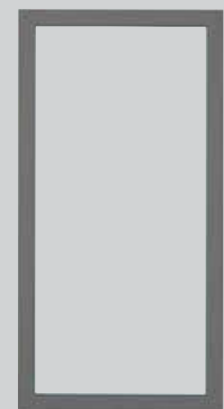
## Large-scale elements



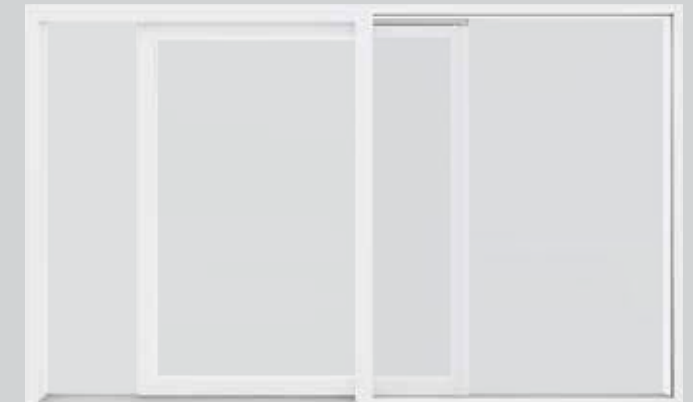
Modern glass architecture through large-scale glazing and lift-and slide doors, also with corner solutions in all-glass versions, XL size up to 12 m wide and 17 m² glass area.



**Side entrance door UPVC**



**Fixed glazing**



**Lift-sliding door UPVC, UPVC/aluminium**



**Lift-sliding door timber/aluminium**

This range shows additional highlights of architecture – a recommendation matching the design style home pure. Further designs can be found in the overview from page 110 on.



## KF 500

UPVC &  
UPVC/ALUMINIUM WINDOW

### TECHNICAL DATA:

- 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 ( $U_g = 0.6 \text{ W/m}^2\text{K}$  and g value 62 %)  $U_w = 0.76 \text{ W/m}^2\text{K}$
- Sound insulation** Soundproofing up to 46 dB (with corresponding glazing)
- System description** 90 mm construction depth
- Revolutionary I-tec locking as standard, this means fully integrated concealed hardware
- Visible or concealed drainage
- Shortened aluminium attachment clad available upon request, for thermo-technical optimised construction connection
- Triple gasket system
- FIX-O-ROUND Technology
- RC2 N as standard (without lockable handle) acc. to EN 1627-1630
- Multi chamber system with additional highly thermally insulating thermal foam (HCFC, HCF and FC free)
- I-tec ventilation available upon request
- Stylish sash created through profiled frames – with the advantages of sash finished in all-glass appearance
- More light through narrow view widths up to 80 mm

I-tec

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

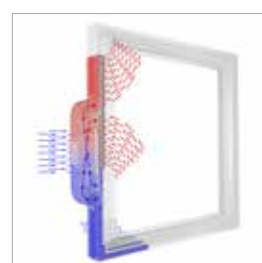
### UPVC VERSION

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



### I-TEC LOCKING

Integrated locking flaps instead of locking pegs ensure the safe locking of the sash. Therefore, the standard hardware version already complies to RC2 N (without lockable handle) acc. to EN1627-1630, standard tested burglary protection.



### I-TEC VENTILATION

Continuous fresh air for the whole room and your well being. Uncontrolled airing leads to energy losses. The I-tec ventilation is equipped with a heat exchanger. 86 % heat recovery reduces the energy losses to a minimum.

## KF 410

UPVC &  
UPVC/ALUMINIUM WINDOW

### TECHNICAL DATA:

- Thermal insulation** Thermal insulation with standard triple glazing and highly thermally insulating edge seal ( $U_g = 0.5 \text{ W/m}^2\text{K}$ )  $U_w = 0.72 \text{ W/m}^2\text{K}$
- For best energy efficiency SOLAR+ glazing ( $U_g = 0.6 \text{ W/m}^2\text{K}$  and g value 62 %)  $U_w = 0.79 \text{ W/m}^2\text{K}$
- Sound insulation** Soundproofing up to 45 dB (with corresponding glazing)
- System description** 90 mm construction depth
- Can be coupled with KV 440 and combined with timber/aluminium windows
- Fully concealed hardware
- Visible or concealed drainage
- Shortened aluminium attachment clad available upon request, for thermo-technical optimised construction connection
- Triple gasket system
- FIX-O-ROUND technology
- Standard security
- 5 chamber system with highly thermally insulating thermal foam (HCFC, HCF and FC free)
- I-tec ventilation available upon request
- Passive house certified in standard version acc. to ift Rosenheim

I-tec

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

### 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

Continuous fresh air for the whole room and your well being. Uncontrolled airing leads to energy losses. The I-tec ventilation is equipped with a heat exchanger. Heat recovery reduces the energy losses to a minimum.



## KF 200

### UPVC/ALUMINIUM WINDOW

#### TECHNICAL DATA:

<b>Thermal insulation</b>	Thermal insulation with standard triple glazing LIGH ( $U_g = 0.6 \text{ W/m}^2\text{K}$ ) $U_w = 0.88 \text{ W/m}^2\text{K}$  Best thermal insulation $U_w$ up to $0.74 \text{ W/m}^2\text{K}$ (with corresponding glazing)
<b>Sound insulation</b>	Soundproofing up to 45 dB (with corresponding glazing)
<b>System description</b>	71 mm construction depth  Narrow view width up to 97 mm  Triple gasket system  Fully concealed hardware available upon request  FIX-O-ROUND Technology  Visible drainage  Security class RC1 and RC2 tested (upon request)  Standard security  5-chamber system  Locking parts screwed into steel – from a certain window size on  Shortened aluminium attachment clad available upon request, for thermo-technical optimised construction connection

I-tec



#### TRIPLE GASKET SYSTEM

Three continuous gasket levels without interruption ensure high impermeability



#### 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:

<b>Thermal insulation</b>	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 <b><math>U_w</math> up to <math>0.80 \text{ W/m}^2\text{K}</math></b> (with 3light glazing)
<b>Sound insulation</b>	Soundproofing up to 45 dB (with corresponding glazing)
<b>System description</b>	71 mm construction depth  Flush design outside and inside also with square-edged glass bead  Sun and privacy protection integrated between the panes and therefore protected  Narrow view width up to 102 mm  Triple gasket system  Fully concealed hardware available upon request  FIX-O-ROUND Technology  5-chamber system  Locking parts screwed into steel – from a certain window size on

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 composite window in modern square-edged design, integration into the facade is possible on three sides. Inside with square-edged glass 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:

<b>Thermal insulation</b>	Thermal insulation with standard quadruple glazing ( $U_g = 0.60 \text{ W/m}^2\text{K}$ ) $U_w = 0.77 \text{ W/m}^2\text{K}$  Best thermal insulation <b><math>U_w</math> up to <math>0.64 \text{ W/m}^2\text{K}</math></b> (with corresponding glazing)
<b>Sound insulation</b>	Soundproofing up to 45 dB (with corresponding glazing)
<b>System description</b>	93 mm construction depth  Sun and privacy protection integrated between the panes and therefore protected – available with I-tec shading upon request  Fully concealed hardware  Highly thermally insulating thermal foam (HCFC, HCF and FC free)  FIX-O-ROUND Technology  Visible or concealed drainage  Triple gasket system  Shortened aluminium attachment clad available upon request, for thermo-technical optimised construction connection  Gasket colour outside black or light grey  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 composite window in modern square-edged design, integration into the facade is possible on three sides. Inside with square-edged glass 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.

## HV 350

### TIMBER/ALUMINIUM WINDOW WITH INTEGRATED BLIND

#### TECHNICAL DATA:

<b>Thermal insulation</b>	Thermal insulation with standard triple glazing ( $U_g = 0.90 \text{ W/m}^2\text{K}$ ) $U_w = 0.99 \text{ W/m}^2\text{K}$  Best thermal insulation at low weight <b><math>U_w</math> up to <math>0.68 \text{ W/m}^2\text{K}</math></b> (with 3light glazing) – passive house certified
<b>Sound insulation</b>	Soundproofing 44 dB as standard, 45 dB (with corresponding glazing)
<b>System description</b>	85 mm construction depth  Modern interior design with square-edged sash  Sun and privacy protection integrated between the panes and therefore protected – available with I-tec shading upon request  Fully concealed hardware  Highly thermally insulating thermal foam (HCFC, HCF and FC free)  Quadruple glazing available upon request – passive house certified  FIX-O-ROUND TEchnology  Visible or concealed drainage  Triple gasket system  Standard security

I-tec



#### MODERN GLASS APPEARANCE

With this innovative composite window 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

#### Thermal insulation

##### TECHNICAL DATA:

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/performance ratio

For best energy efficiency SOLAR+ glazing with  $U_g = 0.6 \text{ W/m}^2\text{K}$  and g value 62 %

#### Sound insulation

Soundproofing up to 46 dB (with corresponding glazing)

#### System description

85 mm construction depth

Classic, square-edged and straight-lined exterior and interior design

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

FIX-O-ROUND Technology

Fully concealed hardware

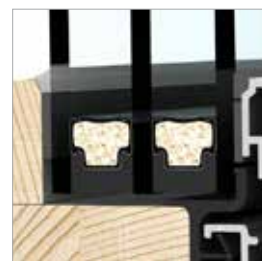
Visible or concealed drainage

Triple gasket system

Designer locking parts

Resistance class up to RC2

I-tec



#### INGENIOUS GLAZING SYSTEM

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



#### FULLY CONCEALED HARDWARE

As standard no visible hardware parts – for better appearance, easier to clean and above all for better impermeability from the inside



#### MODERN DESIGN

The timber/aluminium window HF 210 stands out through its modern, square-edged exterior design.

## HF 310

### TIMBER/ALUMINIUM WINDOW

#### Thermal insulation

##### TECHNICAL DATA:

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

Classic, square-edged and straight-lined exterior and interior design

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

FIX-O-ROUND Technology

Fully concealed hardware

Visible or concealed drainage

Standard security

Triple gasket system

Designer locking parts

Resistance class up to RC2

In the standard version suitable for passive houses acc. to TU Graz

I-tec



#### INGENIOUS GLAZING SYSTEM

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



#### FULLY CONCEALED HARDWARE

As standard no visible hardware parts – for better appearance, easier to clean and above all for better impermeability from the inside



#### MODERN INTERIOR DESIGN

The timber/aluminium window HF 310 stands out through its modern, square-edged interior design.





# home soft

## IDEAL FOR THE SOPHISTICATED

Harmonic shapes and the soft-line design of the **home soft windows** characterise the architecture of your building. The Internorm window systems in soft-line design adapt perfectly to your living style.

There are no limits to your creativity – surfaces and colours allow plenty of room for individualisation. Also available in the **home soft accessories**: Handles, sun and insect protection, colours and large-scale elements. All **home soft** windows made of timber/aluminium, UPVC/aluminium and UPVC can be found under **home soft comfort**.

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







## VIEW FROM THE INSIDE

The round shapes of the **home soft** windows give a great feeling of harmony and cosiness. **home soft** stands for a good standard in life and creates generous space for your artistic abilities.

### Individualisation

**home soft** windows stand out through round shapes in the interior architecture – highlight your individual style with surfaces, Georgian/feature bars and colours!

### Surfaces

Choose between long-lasting UPVC, decor foils for UPVC surfaces and natural timber in a wide range of colours.

### Georgian/feature bars

Choose from an extensive range of Georgian/feature bars: glued-on and integrated Georgian/feature bars in different widths.

### Colours

The colour range – matching your **home soft** windows – can be found on page 55. An overview of all colours can be found on page 114.

## VIEW FROM THE OUTSIDE

You place great importance on a high quality of life and a cosy, comfortable home. Create a calm and pleasant living environment with **home soft** windows!

### Individualisation

**home soft** windows adapt perfectly to the architecture of your home – highlight your unique style with surfaces, Georgian/feature bars and colours!

### Surfaces

Choose between long-lasting UPVC and weather-resistant aluminium in a wide range of colours and rich timber shades.










### Georgian/feature bars

Choose from an extensive range of Georgian/feature bars: glued-on and integrated Georgian/feature bars in different widths.

### Colours

The colour range – matching your **home soft** window – can be found on page 55. An overview of all colours can be found on page 114.



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 <sub>w</sub> = 0.90 / 0.96 U <sub>w</sub> = 0.67	★★★★★ U <sub>w</sub> = 0.69 / 0.77 U <sub>w</sub> = 0.62	★★★★★ U <sub>w</sub> = 0.99 / n.a. U <sub>w</sub> = 0.68				★★★★★ U <sub>w</sub> = 0.72 / 0.79 U <sub>w</sub> = 0.62	★★★★★ U <sub>w</sub> = 0.88 / 0.95 U <sub>w</sub> = 0.74
Soundproofing (in dB)		★★★★★ 33 – 46	★★★★★ 33 – 46	★★★★★ 41 – 45				★★★★★ 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 <small>(glued-on and integrated Georgian/ feature bars in different widths)</small>		★	★	★				★	★

Handles



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



Standard handle  
Aluminium natural  
Part no. 33899

Designer handle  
Steel  
Part no. 34615



Designer handle Athinai  
chrome/stainless steel  
matt  
Part No. 34596

Designer handle Bruxelles  
chrome  
satined  
Part no. 34592

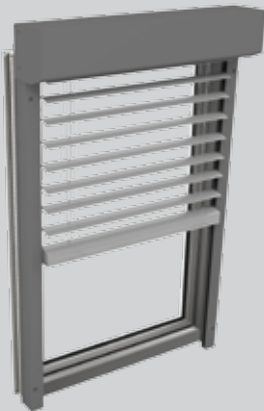
Sun and insect protection



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



Attachment 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

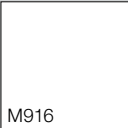

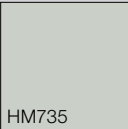
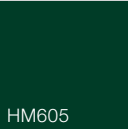
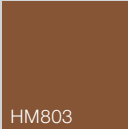
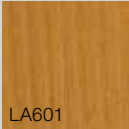
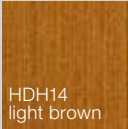
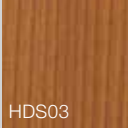
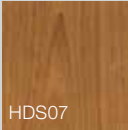
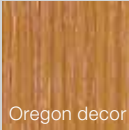

**Attachment roller shutter and attachment mini roller shutter:** Completely fitted on to the window, can be combined with insect protection

**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 114 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 size up to 12 m wide and 17 m² glass area.



Lift-sliding door UPVC, UPVC/aluminium



Side entrance door  
aluminium



Sliding door UPVC, UPVC/aluminium



Lift-sliding door timber/aluminium

This range shows additional highlights of architecture – a recommendation matching the design style home soft. Further designs can be found in the overview from page 110 onward.



## KF 410

### UPVC & UPVC/ALUMINIUM WINDOW

#### TECHNICAL DATA:

- Thermal insulation** Thermal insulation with standard triple glazing and highly thermally insulating edge seal ( $U_g = 0.5 \text{ W/m}^2\text{K}$ )  $U_w = 0.72 \text{ W/m}^2\text{K}$
- For best energy efficiency SOLAR+ glazing ( $U_g = 0.6 \text{ W/m}^2\text{K}$  and g value 62 %)  $U_w = 0.73 \text{ W/m}^2\text{K}$
- Sound insulation** Soundproofing up to 45 dB (with corresponding glazing)
- System description** 90 mm construction depth
- Can be combined with timber/aluminium windows
- Fully concealed hardware
- Visible or concealed drainage
- Shortened aluminium attachment clad available upon request, for thermo-technical optimised construction connection
- Triple gasket system
- FIX-O-ROUND Technology
- Standard security
- 5 chamber system with highly thermally insulating thermal foam (HCFC, HCF and FC free)
- I-tec ventilation available upon request
- Passive house certified in the standard version acc. to ift Rosenheim

I-tec



#### UPVC VERSION

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

Continuous fresh air for the whole room and your well being. Uncontrolled airing leads to energy losses. The I-tec ventilation is equipped with a heat exchanger. Heat recovery reduces the energy losses to a minimum.

## KF 200

### UPVC & UPVC/ALUMINIUM WINDOW

#### TECHNICAL DATA:

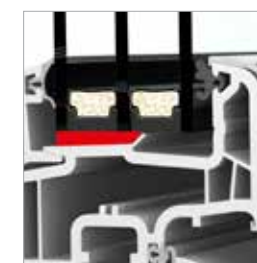
- Thermal insulation** Thermal insulation with standard triple glazing LIGHT ( $U_g = 0.6 \text{ W/m}^2\text{K}$ )  $U_w = 0.88 \text{ W/m}^2\text{K}$
- Best thermal insulation  $U_w$  up to  $0.74 \text{ W/m}^2\text{K}$  (with corresponding glazing)
- Sound insulation** Soundproofing up to 45 dB (with corresponding glazing)
- System description** 71 mm construction depth UPVC/aluminium resp. 68 mm in UPVC
- Narrow view width up to 97 mm
- Triple gasket system
- Fully concealed hardware available upon request
- FIX-O-ROUND Technology
- Security class RC1 and RC2 tested (upon request)
- 5-chamber system
- Locking parts screwed into steel – from a certain window size on
- Standard security
- Shortened aluminium attachment clad available upon request, for thermo-technical optimised construction connection

I-tec



#### UPVC VERSION

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

## KV 440

### UPVC/ALUMINIUM WINDOW WITH INTEGRATED BLIND

#### TECHNICAL DATA:

- Thermal insulation** Thermal insulation with standard quadruple glazing ( $U_g = 0.60 \text{ W/m}^2\text{K}$ )  $U_w = 0.77 \text{ W/m}^2\text{K}$
- 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
- Can be coupled with KF 410 and combined with timber/aluminium
- Sun and privacy protection integrated between the panes and therefore protected – available with I-tec shading upon request
- Fully concealed hardware
- 5 chamber system with highly thermally insulating thermal foam (HCFC, HCF and FC free)
- Available with I-tec shading upon request
- FIX-O-ROUND technology
- Visible or concealed drainage
- Triple gasket system
- Shortened aluminium attachment clad available upon request, for thermo-technical optimised construction connection
- Gasket colour outside black or light grey
- I-tec ventilation available upon request



#### 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 IN ROUND APPEARANCE

With this innovative composite window in round appearance integration into the facade is possible on three sides. Inside with rounded glass 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.

## HF 210

### TIMBER/ALUMINIUM WINDOW

#### TECHNICAL DATA:

- 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/performance ratio
- For best energy efficiency SOLAR+ glazing with  $U_g = 0.6 \text{ W/m}^2\text{K}$  and g value 62 %
- Sound insulation** Soundproofing up to 46 dB  
(with corresponding glazing)
- System description** 85 mm construction depth
- Classic, square-edged and straight-lined exterior and interior design
- Highly thermally insulating thermal foam (HCFC, HCF and FC free)
- FIX-O-ROUND Technology
- Fully concealed hardware
- Visible or concealed drainage
- Triple gasket system
- Designer locking parts
- Resistance class up to RC2



#### INGENIOUS GLAZING SYSTEM

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



#### FULLY CONCEALED HARDWARE

As standard no visible hardware parts – for better appearance, easier to clean and above all for better impermeability from the inside



#### MODERN DESIGN

The timber/aluminium window HF 210 stands out through its rounded design.



## HF 310

### TIMBER/ALUMINIUM WINDOW

#### TECHNICAL DATA:

- 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
- Can be combined with KF 410
- Highly thermally insulating thermal foam (HCFC, HCF and FC free)
- FIX-O-ROUND Technology
- Fully concealed hardware
- Visible or concealed drainage
- Standard security
- Triple gasket system
- Designer locking parts
- Resistance class up to RC2
- In the standard version suitable for passive houses acc. to TU Graz

I-tec



#### INGENIOUS GLAZING SYSTEM

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



#### FULLY CONCEALED HARDWARE

As standard no visible hardware parts – for better appearance, easier to clean and above all for better impermeability from the inside



#### MODERN DESIGN

The timber/aluminium window HF 310 stands out through its rounded design.

## HV 350

### TIMBER/ALUMINIUM WINDOW WITH INTEGRATED BLIND

#### TECHNICAL DATA:

- Thermal insulation** Thermal insulation with standard triple glazing ( $U_g = 0.90 \text{ W/m}^2\text{K}$ )  $U_w = 0.99 \text{ W/m}^2\text{K}$
- Best thermal insulation at low weight  $U_w$  up to  $0.68 \text{ W/m}^2\text{K}$  (with 3light glazing)
- Sound insulation** Soundproofing 44 dB as standard, 45 dB (with corresponding glazing)
- System description** 85 mm construction depth
- Through installation of sun and privacy protection between the panes (blinds, Venetian blinds or Duette®), protected from damage and weather, smooth operation and solar powered drive available
- Available with I-tec shading upon request
- Fully concealed hardware
- Highly thermally insulating thermal foam (HCFC, HCF and FC free)
- Visible or concealed drainage
- FIX-O-ROUND Technology
- Triple gasket system
- Available as passive house certified component with triple insulating glass in combination with additional glass pane

I-tec



#### SOFT-LINE DESIGN

Harmony and aesthetics perfectly combined – achieved by rounding off all visible edges. Proven by many, this solid profile design can be integrated anywhere.



#### 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.



#### 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 TRADITIONALIST

Classic shapes and the traditional design of the ambiente **windows** characterise the architecture of your building. The proven Internorm window systems underline the unique personality of your home.

There are no limits to your creativity – surfaces and colours allow plenty of room for individualisation. Also available in the ambiente **accessories**: Handles, sun and insect protection, colours and large-scale elements. All ambiente windows made of timber/aluminium, UPVC/aluminium and UPVC can be found under ambiente **comfort**.

Enjoy the interesting insights and views under the ambiente **style** section!







VIEW FROM THE INSIDE

The classic shapes of the *ambiente* windows create an exclusive and tasteful living ambience. Internorm *ambiente* windows stand for a high quality of life and offer many design possibilities.

Individualisation

*ambiente* windows stand out with traditional shapes in the interior design – highlight your unique style with surfaces, Georgian/feature bars and colours!

Surfaces

Choose between the long-lasting UPVC, decor foils for UPVC surfaces and natural timber in a wide range of colours.

Georgian/feature bars

Choose from an extensive range of Georgian/feature bars: glued-on and integrated Georgian/feature bars in different widths as well as gold and lead Georgian/feature bars.

Colours

The colour range – matching your *ambiente* window – can be found on page 69. An overview of all colours can be found on page 114.



VIEW FROM THE OUTSIDE

You place great importance on a high quality of life and an exclusive and elegant living style. *ambiente* windows follow the shapes of art nouveau and classicism – from traditional houses to elegant country estates.

Individualisation

*ambiente* windows adapt perfectly to the architecture of your home – highlight your individual style with surfaces, Georgian/feature bars and colours!

Surfaces






Choose between long-lasting UPVC and weather-resistant aluminium in a wide range of colours and rich timber shades.

Georgian/feature bars

Choose from an extensive range of Georgian/feature bars: glued-on and integrated Georgian/feature bars in different widths as well as gold and lead Georgian/feature bars.

Colours

The colour range – matching your *ambiente* window – can be found on page 69. An overview of all colours can be found on page 114.

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 <sub>w</sub> = 0.90 / 0.96	U <sub>w</sub> = 0.69 / 0.77	U <sub>w</sub> = 0.99 / n.a.				U <sub>w</sub> = 0.72 / 0.79	U <sub>w</sub> = 0.88 / 0.95
		U <sub>w</sub> = 0.67	U <sub>w</sub> = 0.62	U <sub>w</sub> = 0.68				U <sub>w</sub> = 0.62	U <sub>w</sub> = 0.74
Soundproofing (in dB)		★★★★★	★★★★★	★★★★★				★★★★★	★★★★★
		33 – 46	33 – 46	41 – 45				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. More attractive designer handles are available from your Internorm distribution partner!

Standard handle  
Aluminium natural  
Part no. 33899

Designer handle  
Steel  
Part no. 34615

Designer handle Athinaï  
Chrome/stainless steel matt  
Part no. 34596

Designer handle Bruxelles  
Chrome satined  
Part no. 34592

Designer handle  
Brass polished  
Part no. 34597

Designer handle Athinaï  
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

Attachment 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®

**Attachment roller shutters and attachment mini 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 114 onward.

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

Large-scale elements

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

Lift-sliding door UPVC, UPVC/aluminium

Side entrance door  
Aluminium

Folding-sliding door UPVC, UPVC/  
aluminium

Lift-sliding door timber/aluminium

KF 410  
UPVC &  
UPVC/ALUMINIUM WINDOW

<b>TECHNICAL DATA:</b>	
Thermal insulation	Thermal insulation with standard triple glazing and highly thermally insulating edge seal ( $U_g = 0.5 \text{ W/m}^2\text{K}$ ) $U_w = 0.72 \text{ W/m}^2\text{K}$  For best energy efficiency SOLAR+ glazing ( $U_g = 0.6 \text{ W/m}^2\text{K}$ and g value 62 %) $U_w = 0.79 \text{ W/m}^2\text{K}$
Sound insulation	Soundproofing up to 45 dB (with corresponding glazing)
System description	90 mm construction depth  Can be coupled with KV 440 and combined with timber/aluminium windows  Fully concealed hardware  Visible or concealed drainage  Shortened aluminium attachment clad available upon request, for thermo-technical optimised construction connection  Triple gasket system  FIX-O-ROUND technology  Standard security  5 chamber system with highly thermally insulating thermal foam (HCFC, HCF and FC free)  I-tec ventilation available upon request  Passive house certified in the standard version acc. to ift Rosenheim



**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 INTERIOR DESIGN**  
The rounded glass bead fits perfectly with the classic design style ambiente.



**I-TEC VENTILATION**  
Continuous fresh air for the whole room and your well being. Uncontrolled airing leads to energy losses. The I-tec ventilation is equipped with a heat exchanger. Heat recovery reduces the energy losses to a minimum.

KF 200  
UPVC &  
UPVC/ALUMINIUM WINDOW

<b>TECHNICAL DATA:</b>	
Thermal insulation	Thermal insulation with standard triple glazing LIGHT ( $U_g = 0.6 \text{ W/m}^2\text{K}$ ) $U_w = 0.88 \text{ W/m}^2\text{K}$  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	71 mm construction depth UPVC/aluminium resp. 68 mm in UPVC  Narrow view width up to 97 mm  Triple gasket system  Fully concealed hardware available upon request  FIX-O-ROUND technology  Security class RC1 and RC2 tested (upon request)  5-chamber system  Locking parts screwed into steel – from a certain window size on  Standard security  Shortened aluminium attachment clad available upon request, for thermo-technical optimised construction connection



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



**I-TEC GLAZING  
FIX-O-ROUND  
TECHNOLOGY**  
Continuous all round 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 impermeability



**KV 440**  
UPVC/ALUMINIUM WINDOW  
WITH INTEGRATED BLIND

Thermal insulation	<b>TECHNICAL DATA:</b>
	Thermal insulation with standard quadruple glazing ( $U_g = 0.60 \text{ W/m}^2\text{K}$ ) $U_w = 0.77 \text{ W/m}^2\text{K}$
	Best thermal insulation <b><math>U_w</math> up to <math>0.64 \text{ W/m}^2\text{K}</math></b> (with corresponding glazing)
Sound insulation	Soundproofing up to 45 dB (with corresponding glazing)
System description	93 mm construction depth  Can be coupled with KF 410 and combined with timber/aluminium  Sun and privacy protection integrated between the panes and therefore protected – available with I-tec shading upon request  Fully concealed hardware  5-chamber system with highly thermally insulating thermal foam (HCFC, HCF and FC free)  Available with I-tec shading upon request  FIX-O-ROUND technology  Visible or concealed drainage  Triple gasket system  Shortened aluminium attachment clad available upon request, for thermo-technical optimised construction connection  Gasket colour outside black or light grey  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 structural provision necessary. No extra fitting necessary for sun protection systems.



**FLUSH DESIGN**  
With this innovative composite window in rounded design integration into the facade is possible on three sides. Inside with rounded glass 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.

**HV 350**  
TIMBER/ALUMINIUM WINDOW  
WITH INTEGRATED BLIND

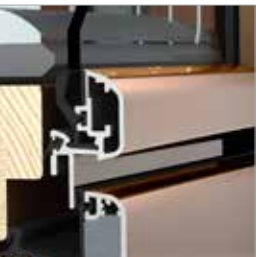
Thermal insulation	<b>TECHNICAL DATA:</b>
	Thermal insulation with standard triple glazing ( $U_g = 0.90 \text{ W/m}^2\text{K}$ ) $U_w = 0.99 \text{ W/m}^2\text{K}$
	Best thermal insulation at low weight $U_w$ up to $0.68 \text{ W/m}^2\text{K}$ (with 3light glazing)
Sound insulation	Soundproofing 44 dB as standard, 45 dB (with corresponding glazing)
System description	85 mm construction depth  Through installation of sun and privacy protection between the panes (blinds, Venetian blinds or Duette®), protected from damage and weather, smooth operation and solar powered drive available  Available with I-tec shading upon request  Fully concealed hardware  Highly thermally insulating thermal foam (HCFC, HCF and FC free)  Visible or concealed drainage  FIX-O-ROUND technology  Triple gasket system  Available as passive house certified component with triple insulating glass in combination with additional glass pane

I-tec

I-tec Glazing

I-tec Shading





**AMBIENTE DESIGN**  
Harmony and aesthetics in perfection – ensured by the rounding off of all visible edges. This solid profile design, proven a million times, can be integrated anywhere.



**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.



**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:

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/performance 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  
  
Harmonic rounded exterior and interior design  
  
Highly thermally insulating thermal foam (HCFC, HCF and FC free)  
  
FIX-O-ROUND technology  
  
Fully concealed hardware  
  
Visible or concealed drainage  
  
Triple gasket system  
  
Designer locking parts  
  
Resistance class up to RC2

I-tec



INGENIOUS GLAZING  
SYSTEM

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



FULLY CONCEALED  
HARDWARE

As standard no visible hardware parts – for better appearance, easier to clean and above all for better impermeability from the inside.



MODERN DESIGN

The timber/aluminium window HF 210 stands out through its profiled exterior design.

HF 310  
TIMBER/ALUMINIUM WINDOW

- TECHNICAL DATA:

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  $U_g = 0.6 \text{ W/m}^2\text{K}$  and g value 62 %

Sound insulation

Soundproofing up to 46 dB

System description

85 mm construction depth  
  
Can be combined with KF 410  
  
Highly thermally insulating thermal foam (HCFC, HCF and FC free)  
  
FIX-O-ROUND technology  
  
Fully concealed hardware  
  
Visible or concealed drainage  
  
Standard security  
  
Triple gasket system  
  
Designer locking parts  
  
Resistance class up to RC2  
  
In the standard version suitable for passive houses acc. to TU Graz

I-tec



INGENIOUS GLAZING  
SYSTEM

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



FULLY CONCEALED  
HARDWARE

As standard no visible hardware parts – for better appearance, easier to clean and above all for better impermeability from the inside.



MODERN DESIGN

The timber/aluminium window HF 310 stands out through its profiled exterior design.





# TRENDSETTER

## NEW STANDARDS SET BY INTERNORM

Continuous further development in technology and always new, innovative ideas make us the pioneer of the branch. We managed to perfect our windows over the decades and to combine aesthetics with the state of the art.

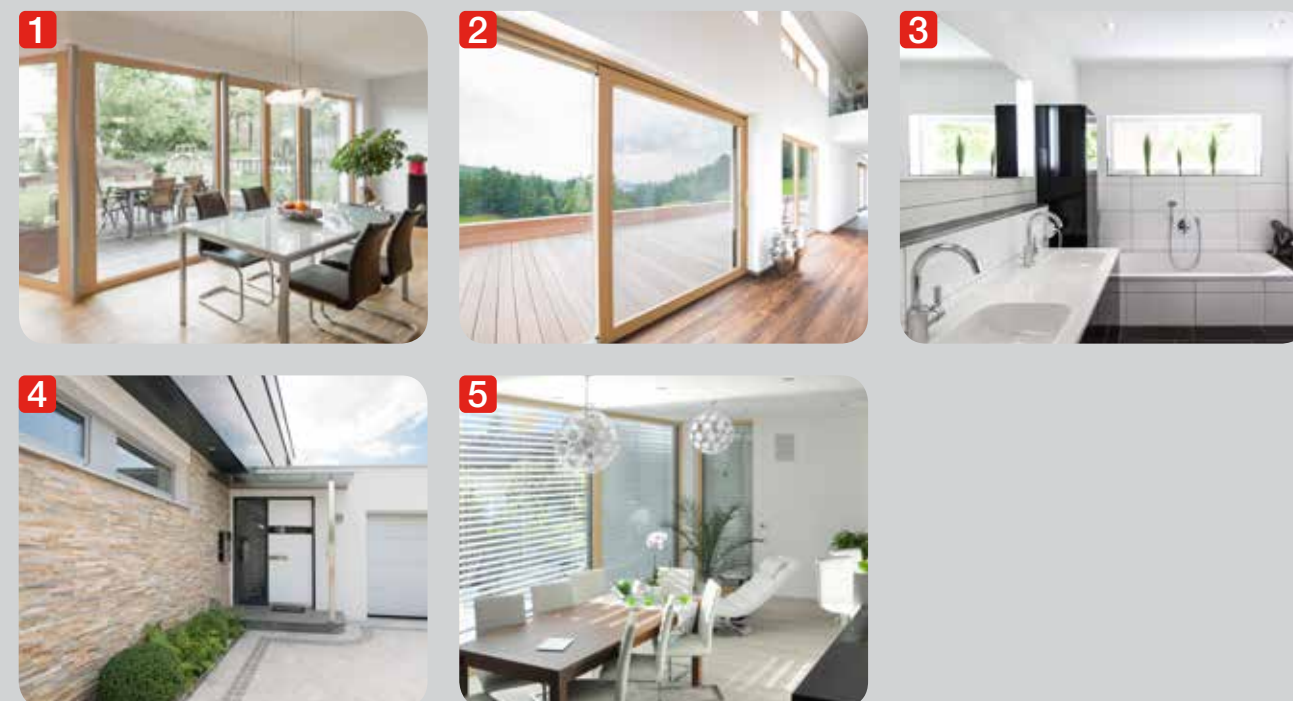
Our own research and developing department secures this clear innovative power. The new, innovative window and entrance door systems are produced 100 % by Internorm: From research and development, extrusion, insulating glass manufacture to logistics – all production steps are in Internorm's hands and are carried out in the three manufacturing sites Traun, Sarleinsbach and Lannach.

As innovation driver Internorm can offer you trendsetting solutions:

- Perfect combinability of all Internorm products
- More light with UPVC/aluminium and timber/aluminium lift-sliding doors
- Comfortable control of shading







# COMBINABILITY

## PERFECTLY COMBINED

### The perfect window for each building style and each room.

With architecture true to its original style, demands on design, energy efficiency and comfort of the windows are rising. These components do not always come together.

Internorm windows not only offer you excellent engineering and unique technologies, they can also be combined with each other as well as with lift-sliding doors, sun and insect protection and also entrance doors. Exactly matching your building style and your requirements. From avant-garde

shapes to modern straight lines to elegantly playful or timeless classic buildings.

If you would rather have a UPVC/aluminium window in the bathroom, but would not like to miss the timber/aluminium window in the living room, then Internorm can offer you the perfect solution. The design of your window and therefore the exterior design of the house always remains the same. Inside of each room you have the possibility to create the window according to your requirements – either in UPVC or in timber.

### 1 FOR OPTIMUM COSINESS

Timber/aluminium windows

- Cosy timber inside, protective aluminium clad outside
- Best suited for low energy and passive houses thanks to the highly thermally insulating thermal foam
- Various frame and sash designs – matching the style of your house

### 2 FOR OPTIMUM LIGHT

Lift-sliding doors

- More light thanks to extensive and large-scale glazing
- Easy lifting and sliding of sash
- No trip hazard thanks to low threshold height

### 3 THE OPTIMUM FOR WET ROOMS

UPVC/aluminium windows

- Excellent thermal insulation
- Weather resistant, practically indestructible and easy to care for
- Various frame and sash designs – matching the style of your house

### 4 THE OPTIMUM FOR HOUSE ENTRANCES

Entrance doors

- Available in aluminium as well as timber/aluminium
- Design matches the style of your house – flush, square-edged, profiled or rounded
- Almost no limits in design possibilities thanks to a wide range of colours, glazing and handles

### 5 THE OPTIMUM FOR MORE PROTECTION

Sun and insect protection

- Protected sun and privacy protection between the panes of composite windows
- Optimum control of light and warmth thanks to the automatic light guidance of Venetian blinds
- Insect protection systems can be combined with sun protection





## SHOW THE SIZE

### UPVC OR UPVC/ALUMINIUM LIFT-SLIDING DOOR KS 430

The new UPVC or UPVC/aluminium lift-sliding door KS 430 creates light-flooded rooms and makes your home appear more spacious and wider. Easy as pie the large-scale sliding elements are pushed to the side and create even more space.

Large-scale glazing requires extra protection. Thanks to standard triple glazing, the lift-sliding door offers perfect thermal insulation, is energy efficient and saves heating

costs. Additionally it offers high impermeability, perfect stability and reliable burglary protection.

Internorm's UPVC or UPVC/aluminium lift-sliding doors are offering you modern design and excellent comfort combined with high-quality technology:

- More light through large glazing areas
- Soft/lift as standard
- Available up to a size of 580 x 280 cm
- Narrow sliding frame and frameless side elements
- Easy operation of sash with up to 400kg sash weight
- Energy efficient and saves heating costs
- No trip hazard thanks to low threshold height
- Attractive colours for individual design requirements
- Better stability thanks to glass fibre threshold
- Toughened glass panes inside and outside protect from injuries if glass breakages occur
- Can be perfectly combined with all other Internorm window systems



**1** Handle G80  
Part no. 36475

**2** Handle Dallas  
Part no. 36412

**3** Handle Softline  
Part no. 32170

### KS 430

#### UPVC & UPVC/ALUMINIUM LIFT-SLIDING DOOR

#### TECHNICAL DATA:

<b>Thermal insulation</b>	Thermal insulation <b>U<sub>w</sub> up to 0.64 W/m²K</b> , passive house suitable
<b>System description</b>	Toughened glass panes inside and outside as standard – protect from injuries if glass breakages occur  Modern, square-edged appearance inside and outside  Large-scale elements – easy lifting and sliding of sash with up to 400kg sash weight  Can be combined with timber/aluminium window systems  Soft/lift as standard for easy lifting and gentle lowering of sliding element  Highly thermally insulation glass fibre threshold for optimum thermal insulation and stability  Low threshold – suitable for barrier-free constructions (optional)  Guiding rail concealed in frame with integrated stopper buffer – for perfect appearance, smooth operation and optimum burglary protection  Glazing of fixed element directly in frame – no visible sash profile, more light through narrow view widths  Unlimited colour choice due to aluminium surface



#### LOW THRESHOLD

A low glass fibre threshold ensures comfortable passing and is best suitable for barrier-free buildings.



#### REVOLUTIONARY DESIGN

The fixed glazing is fitted directly into the frame. Therefore, no sash profile is visible and guarantees more light due to narrow view widths.



#### OPTIONAL DESIGN VERSIONS

Sash imitation for perfect synchronisation of glass clearance (optional)



## CLOSE TO NATURE

### TIMBER/ALUMINIUM LIFT-SLIDING DOOR HS 330

With the timber/aluminium lift-sliding door HS 330 the border between inside and outside disappears. It integrates living spaces in a unique way into the surrounding nature and creates a completely new, almost unlimited experience of space.

Without any effort and as easy as pie the large glass elements of the lift-sliding door can be opened. The frame slides smoothly over the fixed glazing on the side. Is now

made without a door sash which would take up precious living space. Thanks to a low threshold and without an interfering step a harmonic connection between the inside and outside is created.

Timber/aluminium lift-sliding doors HS 330 offer you unique design and exceptional comfort, combined with high-quality technology:

- More light through large glass areas
- Available up to a size of 580 x 280 cm
- Narrow sliding frame and frameless side elements
- Easy lifting and sliding of the sash with up to 400kg sash weight
- Energy efficient and saves heating costs
- Low heat emission thanks to triple glazing
- No trip hazard thanks to low threshold
- Attractive colours for individual design requirements
- Better stability thanks to glass fibre threshold
- Toughened glass panes protect from injuries if glass breakages occur
- Can be perfectly combined with all other Internorm window systems



**1** Handle G80  
Part no. 36475

**2** Handle Dallas  
Part no. 36412

**3** Handle Softline  
Part no. 32170

### HS 330

#### TIMBER/ALUMINIUM LIFT-SLIDING DOOR

##### TECHNICAL DATA:

- Thermal insulation** Thermal insulation  
**U<sub>w</sub> up to 0.68 W/m²K**,  
passive house suitable
- Standard triple security glazing for best thermal insulation
- System description** Toughened glass panes protect from injuries if glass breakages occur
- Modern, square-edged appearance inside and outside
- All-glass corners for modern architecture
- Large-scale elements – easy lifting and sliding of sash with up to 400 kg sash weight
- Soft/lift as standard for easy lifting and gentle lowering of the sliding element
- Highly thermally insulating glass fibre threshold for optimum thermal insulation and stability
- Low threshold – suitable for barrier-free constructions
- Guiding rail concealed in frame with integrated stopper buffer – for perfect appearance, smooth operation and optimum burglary protection
- Resistance class RC2 (optional)
- Glazing of fixed element directly in frame – no visible sash profile, more light through narrow view widths
- Narrow frame profiles for largest possible glass clearances – door can be completely rendered on three sides – there is only glass visible at the side element
- Three attractive handle designs
- Aluminium surface allows unlimited colour choice



##### SOPHISTICATED TIMBER APPEARANCE

The lift-sliding door even features a continuous timber design in the lower threshold area.



##### PERFECT DESIGN

No screw fitted sash in the fixed element; can be rendered on three sides – for perfect glass appearance.



##### ENERGY SAVING GLASS FIBRE THRESHOLD

For optimum thermal insulation and stability, flat version for comfortable passing.

I-tec

I-tec Glazing

FIX-ROUND  
Technology





# BUILDING CONTROL

## INTELLIGENT BUILDING TECHNOLOGY SIMPLY CONTROLLED.

Your living comfort is increasing with the intelligent Internorm building control SmartWindow. The Internorm products I-tec ventilation, I-tec shading, sun protection and fanlight opener can comfortably be controlled via tablet or smart phone.

SmartWindow is easy to install and operate. All you need

is simply a small gateway which is connected to your existing WLAN router. The gateway is providing the interface between the respective components and the operating appliances.

You can download the SmartWindow app with its respective installation instructions for free in the App Store or Google Play.

Nothing stands in the way now of a problem-free operation. Components which are integrated into the building control, can simply be programmed, generate automatically the user interface in the app and can – at your discretion – via the tablet or smart phone (without additional software and PC) be named, and grouped into rooms and sorted.

### Easy operation and comfort

The user interface simply needs a few taps of the finger to move the blinds up and down, to adjust the light guidance according to your requirements, to regulate the ventilator's air volume or to open or close the fanlight.

You can also save personal settings, so-called “scenes”, on the user interface. By the tap of your finger a user-defined application is established.

For operating similar products at the same time, so-called groups are formed.

### The wireless system can be easily extended

Through the proven wireless system as well as through various additional components which are available at electronic retailers the possibility exists to extend the house control individually.

The Internorm recommended weather station, the switchable electrical socket, the opening control and the smoke sensors are directly recognised by the SmartWindow control. Further components can simply be added via wireless modules.

### Advantages

The smart house technology not only provides a certain “fun factor” through operation via the tablet or smart

phone. In fact, it guarantees comfort within your own four walls and optimises energy consumption.





# REVOLUTIONARY

## INTERNORM'S I-TEC INNOVATIONS

With architecture true to its original style, demands on design, technology, quality and comfort of the windows are rising. Under the melodious title of "I-tec", Internorm has been developing a series of revolutionary Internorm technologies to meet these demands. Among the I-tec innovations count a unique hardware system with invisible locking and highest possible security, a ventilation system which is completely integrated into the window as well as a shading system for windows with integrated blinds with an autonomous energy supply. Finally, I-tec glazing is the patented all around glueing of the window frame with the glass pane, the so-called FIX-O-ROUND technology.

### Internorm's I-tec innovations can offer you:

- Easier cleaning of windows thanks to the invisible locking and closing parts
- Better energy efficiency through integrated heat exchanger
- Continuous fresh air through automatic exchange of humid air and unpleasant smells
- Easy breathing for allergy sufferer thanks to the integrated pollen filter
- More burglary protection thanks to the patented all around glueing
- Higher energy efficiency with shading through photovoltaic technology







## I-tec Ventilation

# FRESH AIR AND ENERGY SAVING

Fresh air and energy saving are the main advantages of the directly integrated ventilation in the window. With I-tec ventilation the rooms are aired automatically, energy efficiently and according to the requirements.

### Health

Fresh air ensures wellbeing, good sleep, high concentration and high performance. Even allergy sufferers can breathe again – the optional fitting of filters prevents fine dusts and flower pollen from entering. Through the regulated I-tec ventilation the room air quality is also significantly improved.

### Energy saving

Uncontrolled quick maximum air exchange or permanent airing can lead to high energy losses. The I-tec ventilator is equipped with an integrated **heat exchanger** with high efficiency. Energy losses are reduced to a minimum through the achieved 86 % heat recovery (e.g. KF 500).

### Design

The I-tec ventilator is completely integrated into the

**window systems KF 500, KF 410 and KV 440.** On the outside and inside of the window only narrow ventilation grids are visible. Contrary to conventional ventilation systems there is no interference with the interior or exterior architecture. Fitting the ventilator is carried out in the same process as installing the window.

### Comfort

Windows with integrated I-tec ventilation supply the rooms permanently with fresh, clean air. At the same time damp and used air, unpleasant smells and pollutants are automatically exchanged for fresh air. The control element is fitted directly on the window, thus enabling convenient operation of the ventilator. The I-tec ventilation can be controlled very conveniently via the Smart Window System.

### Security

The I-tec ventilation system also increases security as the window remains closed for the air exchange and therefore, the burglary protection remains intact. When leaving the house there is no uncertainty if the windows were closed after airing.



## I-tec Locking

# THE INVISIBLE LOCKING SYSTEM

The innovative locking is the first real revolution in hardware systems since introducing the turn/tilt hardware at the beginning of the 1970's. For many years Internorm has been using concealed hinges as standard. Additionally, Internorm is applying the same principle to the window frame – no visible hardware. I-tec locking is currently used with the home pure UPVC & UPVC/ aluminium window KF 500 and is revolutionary in more than one aspect: No visible locking parts on the frame are necessary – instead of protruding locking pegs, integrated flaps ensure the safe locking of the sash. The connections of the locking flaps are carried out invisibly in the hollow chambers of the sash profile.

### 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 the smooth, easy to clean UPVC surface of the profile.

### Security which convinces

Windows with I-tec locking comply already in their standard version with resistance class RC2N (with lockable handle and burglary resistant glass RC2) acc. to EN 1627-1630 – as standard tested burglary protection.

### Perfect stability and sophisticated design

The ingenious construction enables 30 % less wide view widths. Generous window sizes and energy saving triple glazing require heavy sash versions. The window is held by a four-joint hinge at the bottom and a stay-arm hinge at the top. The new construction of hinge parts allows sash weights of up to 130 kg in compact design.

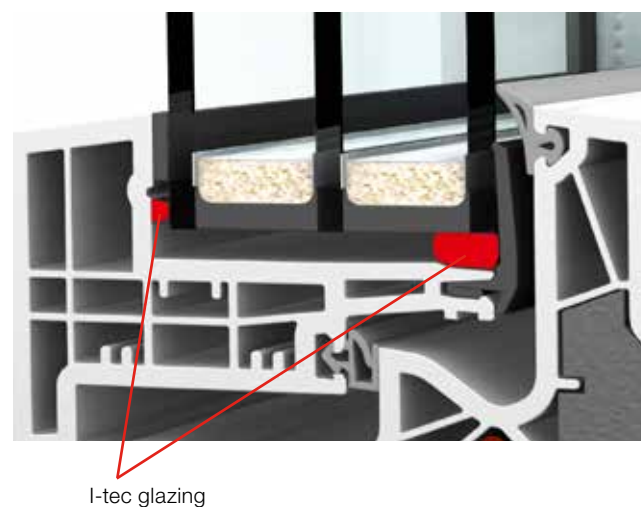
### Advantages at a glance:

- 30 % less wide view widths of frame and sash
- RC2N as standard without functioning restrictions
- Trendsetting thermal insulation as standard  
 $U_w \leq 0.69 \text{ W/m}^2\text{K}$



## INNOVATION ALL AROUND

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 round 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.



## SHADING WITH SELF-SUFFICIENT ENERGY

The energy which is needed and used at the window, should also be produced by the window. The first product which follows this principle is the new motor driven window with integrated sun protection – blind, Venetian blind or Duette®.

### Photovoltaic sun protection with self-sufficient energy

All Internorm windows systems with integrated blinds can be equipped with motor driven shading without external power supply. The energy is gained directly at the window by a photovoltaic module which is integrated into the cover which supplies the electro motor self-sufficiently. The energy is stored in a battery and is available when required. Permanent charging of the battery is carried out already **with diffuse day light**.

### Advantages:

No energy costs, no extra fitting and no chiselling work is necessary as no electric cables are needed.

Consequently, this sun protection is ideal in refurbishments as there is often no power supply available. I-tec shading is ready to use straight after the window has been installed and can be retrofitted to almost any Internorm windows with integrated blinds. The bi-directional control occurs via wireless – several blinds, Venetian blinds or Duette® blinds can be controlled in combination.

### Automatic function

With this function the blind can be optionally operated automatically. This achieves higher energy efficiency combined with more comfort. The automatic function allows automatic opening and closing of the blind at sunrise and sunset. The automatic operation also prevents overheating of the rooms. By measuring temperature and solar radiation, the blind closes before room temperatures rise too high.





# 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 professional 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 CO<sub>2</sub>. 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.

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/m<sup>2</sup>a**.

### 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.

### Orientation of doors

Please note that entrance doors should be fitted in weather-protected positions. When fitting entrance doors with dark surfaces in unprotected south-facing areas, the sun can cause very high surface temperatures on the door which can lead to functionality problems. West-facing doors need to be sufficiently protected from driving rain.

### 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 106.







# FITTING

## CORRECT FITTING IS OF PARAMOUNT IMPORTANCE!

Professional fitting of windows is required for perfect functionality and long-term usability. Thermal insulation and impermeability play an important role in building houses. Severe thermal loss can occur especially in the connecting area to the brickwork. Fitting should only be carried out by trained personnel such as your Internorm distribution partner, who can guarantee you an installation according to the most up-to-date technology, compliance to the standards and regulations and observance to the structural-physical principles which are necessary when installation windows.

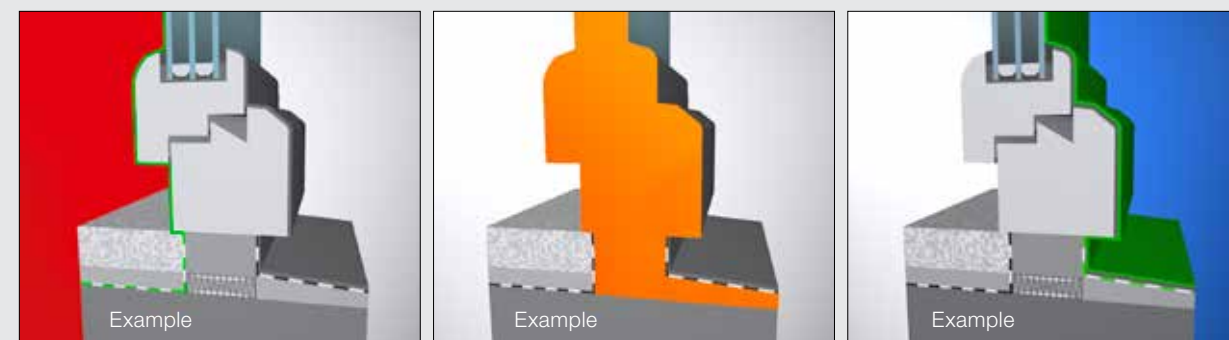
### Important points to consider when fitting windows:

- **Room air temperature, room air humidity:** The connection to the wall (construction connection joint) needs to be closed off permanently airtight from the inside. This prevents damp warm room air entering into the joint, cooling off and forming condensation and mould.
- **Thermal insulation/soundproofing:** The middle level of the construction connection joint needs to be filled up completely with insulation material (PU foam or

mineral fibre insulation material). This level undertakes thermal insulation and soundproofing, but not the function of sealing off against wind or humidity.

- **Outside air temperature, rain, wind etc:** The connection to the brickwork needs to be permanently wind and driving rain tight from the outside. These requirements do not only apply to the window, but also to the window cill connection area. Should humidity enter from the inside, it needs to be able to escape to the outside via the sealing (permeable).
- **Own weight:** Load bearing occurs via packers, fixing is carried out via frame rawl plugs or wall anchors. The fixing distances are depending on the frame material. Nailing does not comply with the state of the art.
- **Movements of the frame construction/building:** Deformations through wind and service loads (leaning against it), changes in length due to temperatures and sagging due to the design of the building (especially with large openings) need to be adjusted by mechanical fixings and distance blocks.

## THREE SEALING LEVELS OFFER RELIABLE PROTECTION – INSIDE AS TIGHT AS POSSIBLE, OUTSIDE AS TIGHT AS NECESSARY:



The sealing on the **INSIDE** divides the room climate from the outside climate. It prevents forming of condensation in the joint area. Use sealing foil or permanent elastic sealing material like e.g. silicone.

The **MIDDLE** seal between the window frame and the wall needs to be filled up completely with thermal insulation material. This guarantees the necessary thermal insulation and soundproofing.

The seal on the **OUTSIDE** needs to offer protection from wind and driving rain. These requirements do not only apply to the window, but also to the window cill connection area.

## CARE PRODUCTS

Internorm products are low-maintenance and easy to clean and look after.

Regular care and maintenance will keep your windows and doors permanently nice and will increase their life time.

We recommend **Internorm care products** for

- UPVC surfaces
- Aluminium surfaces
- Hardware
- Gaskets

These products can be obtained together with an information leaflet from your Internorm distribution partner or in the Internorm online shop as care products under [www.internorm.com](http://www.internorm.com).



Hardware fit   Hardware oil   Care product for gaskets   Intensive cleaner   Decor cleaner   Powder cleaner   Powder polish cleaner   Cleaner for anodised surfaces   Polish cleaner for anodised surfaces





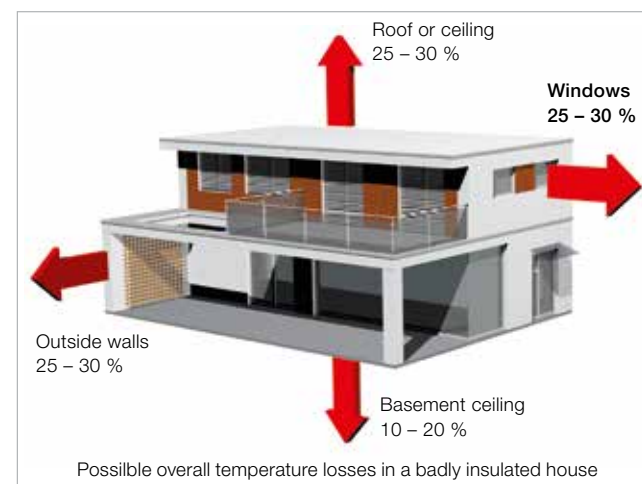
## THERMAL INSULATION

As a building can lose approximately 25 to 30 % of its energy through the windows, the thermal insulation of the windows is especially important. It depends on the frame material, the insulation glass and the impermeability 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 like roller shutters and window shutters improve the U value.

### WINTER THERMAL PROTECTION

The aim is to reduce the energy loss through the transparent building components – windows and facades – during the heating period to an economically feasible amount and in due course to reduce emission of CO<sub>2</sub> through heating. The parameter of the **heat transmission coefficient  $U_w$**  is stated in **W/m<sup>2</sup>K** (watts per square metre kelvin), which is either mathematically calculated according to EN ISO 10077 or metrologically established according to EN ISO 12567. The following factors influence the heat transmission coefficient  $U_w$ :

- Heat transmission through the glazing  $U_g$
- Heat transmission through the frame  $U_f$
- Linear heat loss coefficient of composite glass edge  $\psi$



### SUMMER HEAT PROTECTION

This mainly serves to ensure the thermal comfort in a room during the warm season. Overheating due to solar irradiation through the windows into a room should be preferably avoided using constructive measures.

Guidelines concerning upper limits in temperatures are stated in national standards (e.g. ÖNORM B 8110/3):

- Upper limits in temperature  $t^*$ , daytime  $\leq + 27$  °C
- Upper limits in temperature  $t^*$ , nighttime  $\leq + 25$  °C

## SOUNDPROOFING

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 onto the brain.

Soundproofing of a window is measured in decibel. 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 perceived a reduction of 10 dB as halving the noise. Soundproofing of a window is dependent on frame material, insulating glass, impermeability of the window and the construction connection.

SOUND VOLUME	Hearing threshold	=	0 dB	very quiet
	Pin dropping	=	10 dB	
	Rustling of leaves, clock	=	20 dB	
	Whispering	=	30 dB	quiet
	Quiet talking	=	40 dB	
	Residential street, birds	=	50 dB	
	Talking, radio	=	60 dB	loud
	Loud talking, street	=	70 dB	
	Heavy traffic	=	80 dB	
	Shouting, hooting	=	90 dB	very loud
	Circular saw	=	100 dB	
	Compressed air hammer	=	110 dB	
	Jet plane	=	120 dB	unbearable
	Explosion, rocket	>	150 dB	





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

# 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 insulating 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:

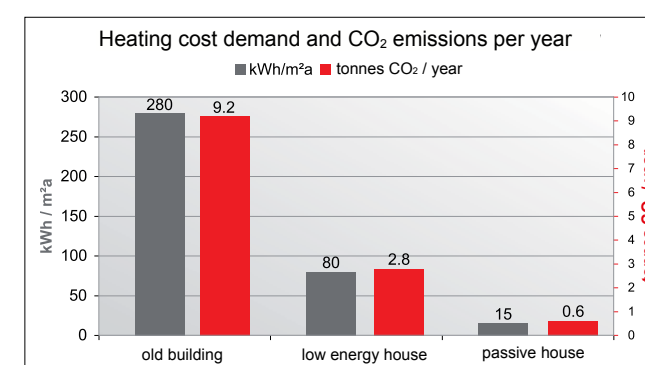
- Highly thermally insulating glazing
- Highly thermally insulating frame
- Thermally optimised composite edge
- Expert installation, thermally optimised

### 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/warm water/house appliances)  $< 120 \text{ kWh/m}^2\text{a}$
- Pressure difference air 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.

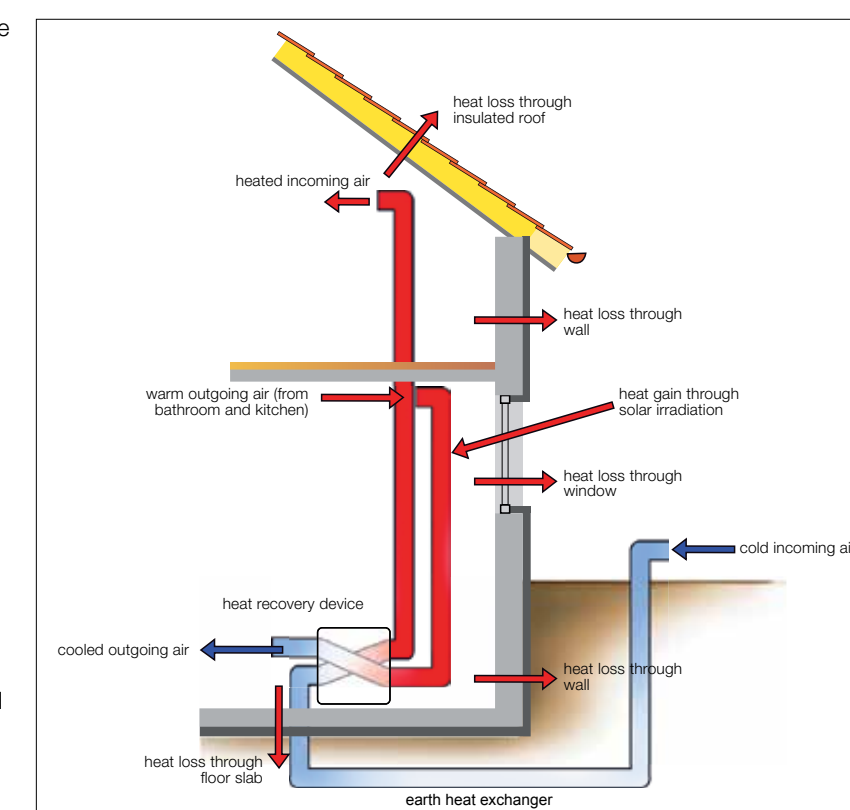





The passive house needs an impermeable outside shell and optimised thermal insulation with integrated ventilation in both directions:

Fresh air is sucked into the building underground through the ventilation pipe, pre-heated by the earth, and led to the heat recovery system.

There, the energy of the used air is passed on to the fresh, filtered, cold air using a heat exchanger. Here, the energy stored in the used air, which would normally be lost in traditional airing, is utilised.

From there, air is led into the living areas and distributed with special nozzles in order to avoid draughts. The air is sucked out of sanitary areas and the kitchen, in order to avoid the spread of unpleasant smells throughout the house.



Reasons for window purchase		<input type="checkbox"/> New building <input type="checkbox"/> Refurbishment
Type of building		<input type="checkbox"/> Single family house or blocks of flats <input type="checkbox"/> Low energy house <input type="checkbox"/> Passive house
Selection of frame material		<input type="checkbox"/> Timber/aluminium <input type="checkbox"/> Combination UPVC/aluminium and timber/aluminium <input type="checkbox"/> UPVC/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"/> Slide <input type="checkbox"/> Turn <input type="checkbox"/> Fold-slide <input type="checkbox"/> Tilt <input type="checkbox"/> Lockable doors <input type="checkbox"/> Fixed glazed <input type="checkbox"/> Outward opening doors <input type="checkbox"/> Lift-slide
Products „all around the window“		<input type="checkbox"/> Integrated sun and privacy protection = composite window <input type="checkbox"/> Sun and privacy protection (roller shutters, Venetian blinds, window shutters, inside blinds, photovoltaic blind, photovoltaic Venetian blind, photovoltaic 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 etc. <input type="checkbox"/> Designer handles <input type="checkbox"/> House 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 <a href="http://www.internorm.com">www.internorm.com</a> <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 suitable thermal insulation $U_w = 0.8$ up to $1.0 \text{ W/m}^2\text{K}$ <input type="checkbox"/> Higher thermal insulation $U_w = 1.0$ up to $1.2 \text{ W/m}^2\text{K}$ <input type="checkbox"/> Standard version $U_w = 1.2$ 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 $R_w =$ over 40 dB <input type="checkbox"/> Medium noise level (e.g. normal road traffic, longer distances from sound sources) – needs soundproofing with $R_w = 36$ up to 39 dB <input type="checkbox"/> Low noise level (e.g. rural housing) – needs soundproofing with $R_w = 32$ up to 35 dB

Which ventilation options do I need?		<input type="checkbox"/> Continuous ventilation with or without fan <input type="checkbox"/> Fully integrated ventilation <input type="checkbox"/> Night-vent ventilation <input type="checkbox"/> Manual opening of windows (turn/tilt)
Fitting of windows		<input type="checkbox"/> Qualified specialist fitting with good practise standards (e.g. ÖNORM, RAL etc.) <input type="checkbox"/> Planning of fitting with good practise standards – together with Internorm distribution partner
Care and maintenance		<input type="checkbox"/> Maintenance contract with qualified Internorm distribution partner <input type="checkbox"/> Maintenance through personal contribution <input type="checkbox"/> Observation of Internorm handbook/warranty, care and maintenance
Window quotes – When comparing always observe this:		<input type="checkbox"/> Window measurements <input type="checkbox"/> Thermal and sound insulation values (acc. to test certificates) <input type="checkbox"/> Glazing <input type="checkbox"/> Hardware <input type="checkbox"/> Construction depth <input type="checkbox"/> Number of gaskets <input type="checkbox"/> Accessories <input type="checkbox"/> Design <input type="checkbox"/> Surface version <input type="checkbox"/> Certification mark <input type="checkbox"/> Integrated technologies
Warranty services		<input type="checkbox"/> On profiles (discolouration, show of condensation on insulating glass) <input type="checkbox"/> On surfaces <input type="checkbox"/> On glazing <input type="checkbox"/> On function <input type="checkbox"/> Reliability of the window manufacturer as warrantor <input type="checkbox"/> Market brand as security
Which services can I expect?		<input type="checkbox"/> Measuring of windows <input type="checkbox"/> Detailed, transparent quotes with images <input type="checkbox"/> Fitting <input type="checkbox"/> Maintenance <input type="checkbox"/> Others
Please note:		<input type="checkbox"/> Local construction regulations <input type="checkbox"/> Adherence to possible design templates <input type="checkbox"/> Funding <input type="checkbox"/> Delivery timescale
Price/performance ratio regards personal demands:		<input type="checkbox"/> Manufacturing quality <input type="checkbox"/> Comprehensive warranties and longevity <input type="checkbox"/> Maximum energy efficiency – perfect thermal insulation – low heating costs <input type="checkbox"/> Climate protection: lower CO <sub>2</sub> emission through superior thermal insulation <input type="checkbox"/> Burglary protection <input type="checkbox"/> Uncomplicated care and maintenance <input type="checkbox"/> Cost effective care and maintenance <input type="checkbox"/> Quick amortisation of the investment <input type="checkbox"/> Value retention for decades





## INDIVIDUAL

### INTERNORM'S DESIGN POSSIBILITIES

The design of your house is as individual as you are. If straight-lined, modern, classical or traditional – let your taste decide. Your windows can be as unique as you and your home. How fortunate that Internorm can offer you exactly the right windows for your house style. The design possibilities are almost unlimited. We will gladly fulfil your personal wishes for shape and colour as well as for all accessories.

Internorm windows can support the design of your house in a multitude of design possibilities. We can offer:

- 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

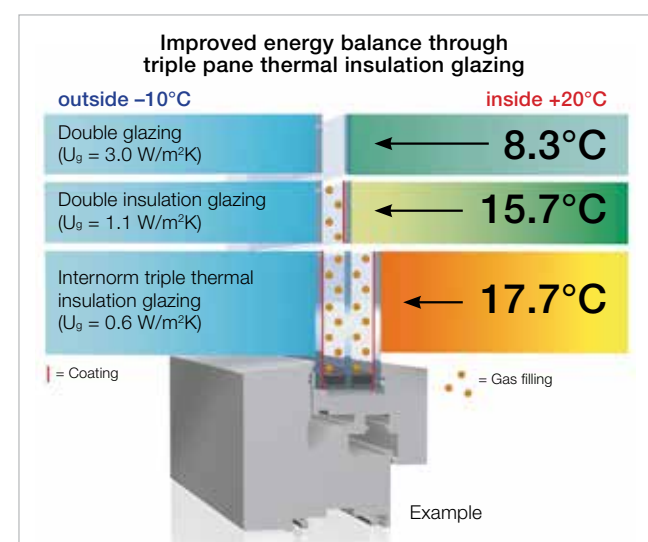




# GLAZING

## 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  $U_g$  are the result of different coating structures and noble gases. Furthermore, triple glazing compared to double glazing accounts for even better thermal insulation values.

### Triple thermal insulation glazing

The highly insulating properties of Internorm window systems with triple thermal insulation 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. With the **special coating SOLAR+** you can achieve further solar gain resulting in additional natural heating.

## 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

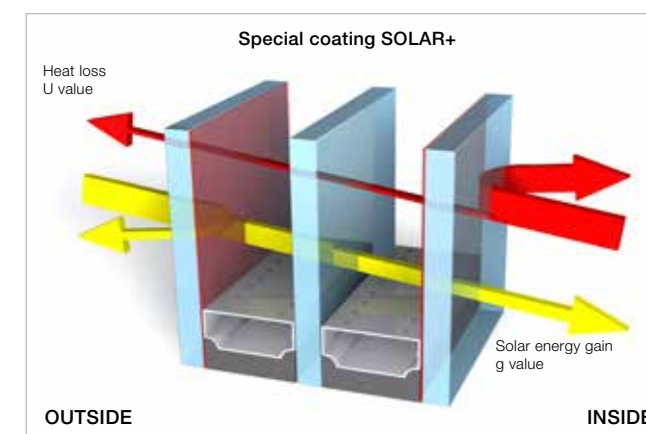
With triple glazing SOLAR+ the overall energy transmission is 20 % higher than with standard triple glazing. Thus the **solar energy gain** also increases by 20 %. Through the glazing you have **additional free of charge heating!**

### A plus point for climate protection

Internorm's climate protection windows achieve optimal 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 CO<sub>2</sub> and SO<sub>2</sub>.

### More light – more brilliancy: SOLAR+

The high transparency of SOLAR+ creates warm brightness on the inside of the building – an important asset especially during the dark winter months.





GLAZING SYSTEMS

The **thermal insulation** of a window depends on the frame material, the glazing and the impermeability. 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<sub>w</sub> = 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 spafers respectively

U<sub>g</sub> = thermal insulation of the respective glazing

R<sub>w</sub> = soundproofing of the window acc. to DIN EN 20140-3 (stated in decibel = dB)

\* test certificate available

TRIPLE GLAZING

UPVC and UPVC/aluminium windows

Glass	Glass code		U <sub>g</sub> / R <sub>w</sub>	g	ALU	ISO	ISO	ISO	ISO
4b/18Ar/4/18Ar/b4	3N2	LIGHT SOLAR+	0.5/34 0.6/34	50 62			0.74*/35* 0.81*/35*	0.72*/34* 0.79*/34*	0.69*/35* 0.76*/35*
6b/18Ar/4/16Ar/b4	33U	LIGHT SOLAR+	0.6/39 0.6/39	49 60			0.81*/39* 0.81*/39*	0.79*/40* 0.79*/40*	0.76*/39* 0.76*/39*
6b/15Ar/4/14Ar/ b4/2F/4(VSG-S)	34P	LIGHT SOLAR+	0.6/43 0.7/43	49 60			0.81*/43* 0.89*/43*	0.79*/43* 0.86*/43*	0.76*/43* 0.84*/43*
4b/12Ar/4/12Ar/b4	3NK	LIGHT SOLAR+	0.7/31 0.8/31	50 62	1.0*/33* 1.1/33*	0.95*/33*			







TRIPLE GLAZING

Timber/aluminium windows

Glass	Glass code		U <sub>g</sub> / R <sub>w</sub>	g	ALU	ISO	ALU	ISO
4b/12Ar/4/12Ar/b4	3NK	LIGHT SOLAR+	0.7/31 0.8/31	50 62	0.97*/34* 0.98/34	0.87/34* 0.91/34	0.98*/34* 1.0/34	0.90*/34* 0.96*/34
4b/18Ar/4/18Ar/b4	3N2	LIGHT SOLAR+	0.5/34 0.6/34	50 62	0.79*/35* 0.88/35	0.69*/35* 0.77/35	0.86*/35* 0.93/35	0.74*/35* 0.81/35
2/1F/2b/18Ar/3/18Ar/ b2/1F/2 (VSG)	34H	LIGHT SOLAR+	0.5/35 0.6/35	49 60	0.79/46* 0.88/46	0.69/46* 0.77/46	0.86/46* 0.93/46	0.74/46* 0.81/46



Composite windows

										
			KV 240		KV 440		KV 440		HV 350	
Glass	Glass code		ALU	ISO	ALU	ISO	ALU	ISO	ALU	ISO
4//6/14Ar/b4	22L	LIGHT	1.1*/41*							
6//6/14Ar/b4	22L	LIGHT	1.1*/43*							
4//6/18Ar/b4	2KU	LIGHT			1.0*/40	0.97*/40	1.0*/40*	0.98*/40*	0.99/44	0.95/44
6//6/18Ar/b4	2KU	LIGHT			1.0*/42*	0.97*/42*	1.0*/42*	0.98*/42*	0.99/44	0.95/44
4//3bESG/12Ar/ 3/14Ar/b4	3AD	LIGHT SOLAR+					0.82*/41* 0.89*/41*	0.77*/41* 0.84*/41*		
6//3bESG/12Ar/ 3/14Ar/b4	3AD	LIGHT SOLAR+			0.83*/43* 0.90*/43*	0.78*/43* 0.85*/43*	0.82*/43* 0.89/43*	0.77*/43* 0.84*/43*		
4//3bESG/12Kr/ 3/14Kr/b4	3AE	LIGHT SOLAR+						0.70*/41* 0.70*/41*		
6//3bESG/12Kr/ 3/14Kr/b4	3AE	LIGHT SOLAR+				0.71*/43* 0.71*/43*		0.70*/43* 0.70*/43*		
4//3bESG/10Kr/ 2TVG/10Kr/3bESG	37F	LIGHT		0.80*/38					0.71/39	0.68/39
6//3bESG/10Kr/ 2TVG/10Kr/3bESG	37F	LIGHT		0.80*/40					0.71*/41	0.68*/41
4//3bESG/12Ar/ 2TVG/12Ar/3bESG	37G	LIGHT							0.78/39	0.73/39
6//3bESG/12Ar/ 2TVG/12Ar/3bESG	37G	LIGHT							0.78*/41	0.73*/41
4//4bESG/ 8Kr/4/8Kr/b4	3TV	LIGHT							0.79/44	0.75/44
6//4bESG/ 8Kr/4/8Kr/b4	3TV	LIGHT							0.79*/44	0.75*/44
4//4bESG/ 10Ar/4/10Ar/b4	37M	LIGHT							0.85/43	0.81/43
6//4bESG/ 10Ar/4/10Ar/b4	37M	LIGHT							0.85*/43	0.81*/43
4//4bESG/10Kr/ 4/10Kr/b4ESG	3T2	LIGHT							0.72/43	0.68/43
6//4bESG/10Kr/ 4/10Kr/b4ESG	3T2	LIGHT							0.72*/43	0.68*/43

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 in the versions stated in the test certificates. Sizes and versions deviating from this can achieve different values.

## HANDLES



**Handle G80**  
Part no. 36423

**Handle G80**  
Part no. 36404

**Handle G80**  
Part no. 36400

**Secustik handle G80**  
Part no. 34139  
(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



**Designer handle**  
Athinaï chrome/  
stainless steel  
matt  
Part no. 34596

**Designer handle**  
Athinaï 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**  
Athinaï 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

## GLASS TYPES



Chinchilla



Masterpoint



Spotlyte



Wired glass



Linea



Mastercarré



Kathedral hammered



UADI



Satinato white



Ornament 504



Altdeutsch K



Reflo



## SPACERS

Internorm **ISO spacers** achieve the highest overall energy efficiency of the window system. Additionally, the 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.

## IMPORTANT INFORMATION

**Designer glass** cannot always be depicted completely true to the original in colour and structure.

To prevent 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 **composite windows** 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](http://www.internorm.co.uk)





# SUN AND INSECT PROTECTION SYSTEMS

## IDEAS FOR PERFECT SHADING

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

**Windows with integrated blinds:** Sun and privacy protection integrated between the panes and therefore protected. Choose between blinds, Venetian blinds or Duette®, optional with sun protection with self-sufficient energy (I-tec shading)

**Venetian blinds:** Optimum control and guidance of light and warmth through adjustable slats, upon request available with day light guidance – 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

**Attachment roller shutters and attachment mini 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

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



Inside blinds



Window shutters



Pull-down flyscreens



Turn or fixed frames



Sliding frames



Windows with integrated blinds



Venetian blinds



Attachment roller shutters



Attachment roller shutters



Mini attachment roller shutters



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

**UPVC**

UPVC white

Decor foils\*

Brilliant white\*\*

Golden oak\*\*

Cream white\*\*\*

Dark grey\*

Oregon decor\*\*

\* Available with KF 410, KV 440 and KS 430  
 \*\* Available with KF 410, KV 440, KS 430 and KF 200  
 \*\*\* Only with KF 200

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 type spruce

Timber type larch

**TIMBER**

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

**UPVC**

UPVC white

M916

HM803

HM113

HM817

HM735

HM768

HM906

HM304

HM704

HM716

HM907

HM605

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

**ALUMINIUM ATTACHMENT CLAD**

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 Gray

DM03 Dark grey

Stainless steel

EL01 Stainless steel matt look

EL02 Stainless steel gloss look

hires colours

HF916

HF304

HFM11

HF113

HF605

HFM12

HF735

HFM01

HFM13

HF704

HFM02

HFM14

HF716

HFM03

HFM21

HF817

HFM04

HFM22

HF768

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 colour 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.







# WITH OUR WARRANTIES YOU CAN ENJOY INTERNORM WINDOWS FOR MANY YEARS.

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. We can guarantee the following:

## WARRANTIES

Warranty	10 YEARS	<ul style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>No unnatural colour changes or cracked surfaces due to weather influences for anodised or powder coated window and door profiles made of aluminium.</li> <li>No condensation between the panes of insulating glass.</li> <li>The function of the timber, thermal foam and aluminium profiles compounds is guaranteed for all Internorm timber/aluminium window systems, provided that the Internorm installation and maintenance guidelines have been adhered to.</li> <li>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.</li> <li>The glue connection of glued Georgian/feature bars.</li> </ul>
Warranty	5 YEARS	<ul style="list-style-type: none"> <li>PVD coated door handles are guaranteed against corrosion if there is no mechanical change.</li> <li>No unnatural 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.</li> </ul>
Warranty	3 YEARS	<ul style="list-style-type: none"> <li>No unnatural colour changes or surface cracks due to weather influences for roller shutter profiles made of UPVC.</li> <li>No unnatural colour changes or surface cracks due to weather influences for anodised or powder coated roller shutter and blind profiles made of aluminium.</li> <li>The function of the window or door fittings is guaranteed, provided that the Internorm installation and maintenance guidelines have been adhered to.</li> </ul>
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 that 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.





## CERTIFICATIONS AND AWARDS



Austrian State Emblem



Austrian Quality Label



CE Certification



TUV



Institute for Window Technology Rosenheim



Plus X Award



RAL Quality Seals



Federal Ministry for Traffic, Innovation and Technology



Technical University Graz



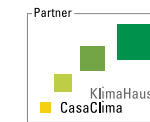
Minergie® Certificate



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



Subject to technical changes, layout and printing errors.

Internorm International GmbH is an ARA licence partner:  
Our licence number is 4477.

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