WINDOWS
Highlights of Architecture
2013/14
QUALITY MADE IN AUSTRIA

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

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

Lannach/Styria
Timber/aluminium production
TRUST
EUROPE’S NO. 1
WINDOW BRAND!

We operate internationally and are Europe’s no.1 leading window brand. We employ more than 1,800 members of staff. Already, more than 20 million window and door units – 100% “Made in Austria” – have left out three production sites in Traun, Sarleinsbach and Lannach. From the invention of the UPVC window, up until the current high-tech and high-design innovations, our family company has been setting high standards all across Europe. Together with more than 1,250 distribution partners in 20 different countries, we guarantee you brand-leading product quality and a high level of service.

Apart from the exterior and interior appearance of a building, the highlights of architecture like windows and doors are of paramount importance to enable you to achieve your dream house. Wouldn’t everyone like to live in such a way that matches their lifestyle and reflects their personality best?

With Internorm you will find ideal solutions for your windows, doors, sun and insect protection which will match your lifestyle and way of living perfectly. The three design styles studio, home and ambiente are reflected through their individuality, diversity and comfort.

Sales of more than 20 million window and door units convey a very clear message: Internorm stands for quality, trust and innovative strength.

Put your trust and invest in Internorm windows and doors for a better quality of life, higher security and increase the value of your home!

Mag. Christian Klinger, Mag. Anette Klinger, DI (FH) Stephan Kubinger, MBA
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 fulfill 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?
DesignStyles

Studio

Ambiente

Home Pure

Home Soft
Window Overview

Styles/windows

Timber/aluminium

HF 200
U\textsubscript{w} up to 0.69 W/m²K

HV 240
U\textsubscript{w} up to 0.63 W/m²K

UPVC/aluminium

KF 220
U\textsubscript{w} up to 0.74 W/m²K

KV 240
U\textsubscript{w} up to 0.80 W/m²K

UPVC

KF 220
U\textsubscript{w} up to 0.74 W/m²K

HV 240
U\textsubscript{w} up to 0.69 W/m²K

HF 200
U\textsubscript{w} up to 0.63 W/m²K

KF 200
U\textsubscript{w} up to 0.62 W/m²K

KV 240
U\textsubscript{w} up to 0.81 W/m²K

KF 500
U\textsubscript{w} up to 0.69 W/m²K

HV 340
U\textsubscript{w} up to 0.69 W/m²K

HF 300
U\textsubscript{w} up to 0.69 W/m²K

KF 200
U\textsubscript{w} up to 0.81 W/m²K

KV 340
U\textsubscript{w} up to 0.79 W/m²K

KF 410
U\textsubscript{w} up to 0.62 W/m²K

KF 200
U\textsubscript{w} up to 0.81 W/m²K

HF 300
U\textsubscript{w} up to 0.69 W/m²K

KF 410
U\textsubscript{w} up to 0.62 W/m²K

KV 340
U\textsubscript{w} up to 0.79 W/m²K

KF 200
U\textsubscript{w} up to 0.81 W/m²K

KF 200
U\textsubscript{w} up to 0.81 W/m²K

KF 200
U\textsubscript{w} up to 0.81 W/m²K
IDEAL FOR THE INDIVIDUALIST

Clear shapes and diminished appearance of studio windows fit perfectly with the architecture of your building. The large surface-flush systems emphasize your 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**

Even down to the smallest details creates room for your self-fulfilment and the perfect environment to relax and withdraw from your everyday work. *studio* stands for a high standard of living and conveys a more unique and modern attitude towards life.

**Individualisation**

*studio* windows stand out through clear structures of interior architecture – highlight your unique style with surfaces and colours!

**Surfaces**

You can 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 19. An overview of all colours can be found on page 98.

**VIEW FROM THE OUTSIDE**

You see yourself as a trendsetter and possess a high affinity to technological progress. *studio* underlines your exclusive life style! 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**

You can choose between long-lasting UPVC, 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 19. An overview of all colours can be found on page 98.

**Fitting possibilities**

*studio* windows allow for frameless architecture – this means rendered on three sides into the brickwork (with KF 400 and KF 405), classic architecture – fitting with completely visible window frame with narrow view widths and modern refurbishment – stylised sash/frame.

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### MATERIAL INSIDE

**UPVC OR TIMBER**

- white
- UPVC windows
- UPVC/aluminium windows
- Timber/aluminium windows

**TIMBER**

- in all RAL colours
- Timber/aluminium windows

**Timber**

- in varnished and opaque standard colours
- Timber/aluminium windows

### MATERIAL OUTSIDE

**UPVC**

- white
- UPVC windows

**ALUMINIUM**

- attachment clad in highly weather resistant colours
- UPVC/aluminium windows
- Timber/aluminium windows

**ALUMINIUM**

- attachment clad in many RAL colours
- UPVC/aluminium windows
- Timber/aluminium windows

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**Frameless fitting**
<table>
<thead>
<tr>
<th>Material</th>
<th>Timber/aluminium</th>
<th>UPVC/aluminium</th>
<th>UPVC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HF 200</td>
<td>HV 240</td>
<td></td>
</tr>
<tr>
<td><strong>Thermal insulation</strong> (in W/m²K)</td>
<td>★★★★★&lt;br&gt;Uw = 0.80 / 0.73</td>
<td>★★★★★&lt;br&gt;Uw = n.a. / 0.96</td>
<td></td>
</tr>
<tr>
<td></td>
<td>HF 200</td>
<td>KV 240</td>
<td></td>
</tr>
<tr>
<td><strong>Soundproofing</strong> (in dB)</td>
<td>★★★★&lt;br&gt;37 – 47</td>
<td>★★★★&lt;br&gt;41 – 45</td>
<td></td>
</tr>
<tr>
<td></td>
<td>KV 240</td>
<td>KF 220</td>
<td></td>
</tr>
<tr>
<td><strong>Security</strong></td>
<td>★★★&lt;br&gt;RC1, RC2</td>
<td>★★★★&lt;br&gt;WK1, WK2</td>
<td>★★★★&lt;br&gt;WK1, WK2</td>
</tr>
<tr>
<td></td>
<td>KF 220</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Locking</strong></td>
<td>★★★★&lt;br&gt;concealed</td>
<td>★★★★&lt;br&gt;exposed</td>
<td>★★★★&lt;br&gt;exposed</td>
</tr>
<tr>
<td></td>
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<tr>
<td><strong>Dimensions mm</strong></td>
<td>Frame construction depth</td>
<td>85</td>
<td>71</td>
</tr>
<tr>
<td></td>
<td>View width frame/sash</td>
<td>114</td>
<td>98</td>
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<tr>
<td></td>
<td>View width flying mullion (2 sashes)</td>
<td>134</td>
<td>100</td>
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<tr>
<td></td>
<td>View width transom (2 sashes)</td>
<td>173</td>
<td>154</td>
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<tr>
<td><strong>Opening types</strong></td>
<td>Fixed</td>
<td>★</td>
<td>★</td>
</tr>
<tr>
<td></td>
<td>Turn and tilt/turn</td>
<td>★</td>
<td>★</td>
</tr>
<tr>
<td></td>
<td>Tilt</td>
<td>★</td>
<td>★</td>
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<tr>
<td></td>
<td>Sliding windows</td>
<td>★</td>
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<tr>
<td></td>
<td>Lockable doors</td>
<td>★</td>
<td>★</td>
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<tr>
<td></td>
<td>Sliding doors</td>
<td>★</td>
<td>★</td>
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<tr>
<td></td>
<td>Doors with threshold</td>
<td>★</td>
<td>★</td>
</tr>
<tr>
<td></td>
<td>Outward opening doors</td>
<td>★</td>
<td>★</td>
</tr>
<tr>
<td><strong>Gaskets</strong></td>
<td>quantity</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Bead gasket colour outside</td>
<td>black</td>
<td>black</td>
</tr>
</tbody>
</table>
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.

### Handles

- **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

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

**Composite windows**: Integrated between the panes, therefore provide privacy and sun protection – 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 on to the window, can be combined with insect protection.

**Insect protection**: Fixed, turn, sliding or drop-down fly screen. 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 98.

**Exterior colours**
- M916
- HM113
- HF735
- EL01
- EL02
- HMB06
- HFM02
- HFM03
- HM716

**Interior colours**
- White
- RAL1013
- F916
- F500
- F501
- R504
- LA600
- F509
- RAL7040

### 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.

This range shows additional highlights of architecture – a recommendation matching the design style **studio.** Further designs can be found in the overview from page 98 onwards.
**KF 220**

**UPVC & UPVC/ALUMINIUM WINDOW**

- Thermal insulation with standard triple glazing
  
  SOLAR+ \((U_g = 0.6 \text{ W/m}^2\text{K})\) \(U_\text{w} = 1.1 \text{ W/m}^2\text{K}\)

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

- Soundproofing up to 43 dB (with corresponding glazing)

- 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

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**KV 240**

**UPVC/ALUMINIUM COMPOSITE WINDOW**

- Thermal insulation with standard triple glazing
  
  \((U_g = 0.95 \text{ W/m}^2\text{K})\) \(U_\text{w} = 1.1 \text{ W/m}^2\text{K}\)

- Best thermal insulation at low weight \(U_\text{w} \) up to 0.80 \text{ W/m}^2\text{K}\) (with 3light glazing)

- Soundproofing up to 45 dB (with corresponding glazing)

- 71 mm construction depth

- Flush design outside and inside also with square glass bead

- Integrated between the panes, therefore provides privacy and sun protection – i-tech shading available upon request.

- Fully concealed hardware upon request

- Narrow view width up to 102 mm

- FIX-O-ROUND technology

- 5 chamber system

- Triple gasket system

- Frameless sash facilitates easier cleaning and maintenance of the glass

- Standard security

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**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.

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**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 square-edged glass bead available upon request.

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**I-TEC SHADING**

Available upon request with photovoltaic blind, Venetian blind or Duette with self-sufficient energy. Energy supply via integrated photovoltaic module, no extra fitting necessary, bi-directional wireless control.
**HF 240**
**TIMBER/ALUMINIUM COMPOSITE WINDOW**
- Thermal insulation with standard triple glazing
  \( U_g = 0.90 \text{ W/m}^2\text{K} \) \( U_w = 0.96 \text{ W/m}^2\text{K} \)
- 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 0.69 W/m²K (with corresponding glazing)
- Soundproofing up to 45 dB (with corresponding glazing)
- 85 mm construction depth
- Modern interior design with square-edged sash
- Integrated between the panes, therefore provides privacy and sun protection – i-tech shading available upon request.
- Fully concealed hardware
- Highly thermally insulating thermal foam (HCFC, HFC and FC free)
- FIX-O-ROUND technology
- Visible or concealed drainage
- Standard security
- Triple gasket system

**HV 240**
**TIMBER/ALUMINIUM COMPOSITE WINDOW**
- Thermal insulation with standard triple glazing
  \( U_g = 0.90 \text{ W/m}^2\text{K} \) \( U_w = 0.96 \text{ W/m}^2\text{K} \)
- Best thermal insulation at low weight \( U_g \) up to 0.63 W/m²K (with 3light glazing) – passive house certified
- Soundproofing up to 45 dB (with corresponding glazing)
- 85 mm construction depth
- Modern interior design with square-edged sash
- Integrated between the panes, therefore provides privacy and sun protection – i-tech shading available upon request.
- Fully concealed hardware
- Highly thermally insulating thermal foam (HCFC, HFC and FC free)
- FIX-O-ROUND technology
- Visible or concealed drainage
- Triple gasket system
- Frameless sash facilitates easier cleaning and maintenance of the glass
- Standard security

**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.

**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® with self-sufficient energy. Energy supply via integrated photovoltaic module, no extra fitting necessary, bi-directional wireless control.
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.

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 skilful combination of modern age and tradition:

**HOME PURE**

home pure meets the demands of a modern and straight-lined style creating bright, light-flooded living environments for you and your family.

**HOME SOFT**

home soft feels friendly and cosy and 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.
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 meets your demands of pure aesthetics. home pure stands for a high standard of living and reinforces your individual attitude to life in a puristic style.

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

Surfaces
You can choose between long-lasting UPVC and natural timber in a wide range of colours.

Colours
The colour range – matching your home pure windows – can be found on page 33. An overview of all colours can be found on page 98.

MATERIAL INSIDE
UPVC OR TIMBER
white
UPVC windows
UPVC/aluminium windows
Timber/aluminium windows

TIMBER
in all RAL colours
Timber/aluminium windows

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
You can choose between long-lasting UPVC, 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 33. An overview of all colours can be found on page 98.

MATERIAL OUTSIDE
UPVC
white
UPVC window

ALUMINIUM
attachment clad in highly weather resistant colours
UPVC/aluminium windows
Timber/aluminium windows

ALUMINIUM
attachment clad in many RAL colours
UPVC/aluminium windows
Timber/aluminium windows

home pure Views
<table>
<thead>
<tr>
<th>Material</th>
<th>Timber/aluminium</th>
<th>UPVC/aluminium</th>
<th>UPVC</th>
</tr>
</thead>
<tbody>
<tr>
<td>HF 200</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HV 240</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>KF 500</td>
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<td>KF 410</td>
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<td></td>
</tr>
<tr>
<td>KF 410</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Thermal insulation (in W/m²K)**
- **Coating SOLAR+ / LIGHT**
  - SOLAR: Uw = 0.81 / 0.74
  - LIGHT: Uw = n.a. / 0.97
  - Best value: Uw = 0.70 / 0.63

**Soundproofing (in dB)**
- 37 – 47
- 43 – 45

**Security**
- RC1, RC2
- WK1, WK2
- RC2
- WK1, WK2

**Locking**
- Concealed
- Concealed
- Fully integrated
- Concealed
- Concealed
- Exposed
- Fully integrated
- Concealed

**Dimensions mm**
- **Frame construction depth**
  - 85
  - 85
  - 93
  - 93
  - 71
  - 71
  - 93
  - 93

- **View width frame/sash**
  - 114
  - 114
  - 80
  - 113
  - 97
  - 102
  - 117
  - 133

- **View width flying mullion (2 sashes)**
  - 134
  - 134
  - 117
  - 133
  - 119
  - 130
  - 117
  - 133

- **View width transom (2 sashes)**
  - 173
  - 173
  - 139
  - 187
  - 170
  - 181
  - 139
  - 187

**Opening types**
- Fixed
- Turn and tilt/turn
- Tilt
- Sliding windows
- Lockable doors
- Sliding doors
- Sliding doors
- Doors with threshold
- Outward opening doors

**Gaskets**
- Quantity: 3
- Gasket colour outside: black

**Material**
- Timber/aluminium
- UPVC/aluminium
- UPVC
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.

### Handles

Standard handle G80
- [image]
- Part no. 36423

Standard handle G80 incl. lockable
- [image]
- Part no. 36448

Securitik handle G80
- [image]
- Part no. 36420 (only for KF 500)

Handle Dallas
- [image]
- 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.

- **Composite windows**: Integrated between the panes, therefore provide privacy and sun protection – 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 on to the window, can be combined with insect protection
- **Insect protection**: Fixed, turn, sliding or drop-down fly screen. Can be combined with sun protection.

### Colours

Here is a selection of colours as a recommendation, matching your home pure window. The complete colour range can be found in the overview from page 98.

- **Exterior colours**
  - M916
  - HM113
  - HF735
  - ELO1
  - ELO2
  - HM906
  - HFM02
  - HFM03
  - HM716
  - HM817

- **Interior colours**
  - White
  - RAL1013
  - FI906
  - FI501
  - FI503
  - FI505
  - FI502
  - LA602
  - RAL7040

### 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.

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

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 EN 1627–1630, standard tested burglary protection.

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

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

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.

OUTSIDE GASKETS
In the UPVC/aluminium version you can choose between black and light grey gaskets for the outside.

KF 500
UPVC & UPVC/ALUMINIUM WINDOWS
- Thermal insulation with standard triple glazing
  SOLAR+ and highly thermally insulating edge seal
  ($U_g = 0.6 \text{ W/m}^2\text{K}$) $U_w = 0.80 \text{ W/m}^2\text{K}$
- Best thermal insulation $U_w$ up to 0.69 W/m²K
  (with corresponding glazing)
- Soundproofing up to 46 dB (with corresponding glazing)
- 90 mm construction depth
- Revolutionary I-tec locking as standard, this means fully integrated concealed hardware
- 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
- Triple gasket system
- Visible or concealed drainage
- 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, HFC and FC free)
- Shortened aluminium attachment clad available upon request, for thermo-technical optimised construction connection

KF 410
UPVC & UPVC/ALUMINIUM WINDOW
- Thermal insulation with standard triple glazing
  SOLAR+ and highly thermally insulating edge seal
  ($U_g = 0.6 \text{ W/m}^2\text{K}$) $U_w = 0.79 \text{ W/m}^2\text{K}$
- Best thermal insulation $U_w$ up to 0.69 W/m²K
  (with corresponding glazing)
- Soundproofing up to 45 dB (with corresponding glazing)
- 90 mm construction depth
- Triple gasket system
- Fully concealed hardware
- Visible or concealed drainage
- FIX-O-ROUND technology
- Standard security
- 5 chamber system with highly thermally insulating thermal foam (HCFC, HFC and FC free)
- Shortened aluminium attachment clad available upon request, for thermo-technical optimised construction connection
**KF 200**
UPVC/ALUMINIUM WINDOW

- Thermal insulation with standard triple glazing
  SOLAR+ \((U_\text{g} = 0.7 \text{ W/m}^2\text{K})\) \(U_\text{w} = 1.1 \text{ W/m}^2\text{K}\)
- Best thermal insulation \(U_\text{w} \text{ up to 0.81 W/m}^2\text{K}\) (with corresponding glazing)
- Soundproofing up to 45 dB (with corresponding glazing)
- 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
- Resistance class WK1 and WK2 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.

**KV 240**
UPVC/ALUMINIUM COMPOSITE WINDOW

- Thermal insulation with standard triple glazing
  \((U_\text{g} = 0.95 \text{ W/m}^2\text{K})\) \(U_\text{w} = 0.99 \text{ W/m}^2\text{K}\)
- Best thermal insulation at low weight
  \(U_\text{w} \text{ up to 0.80 W/m}^2\text{K}\) (with 3light glazing)
- Soundproofing up to 45 dB (with corresponding glazing)
- 71 mm construction depth
- Flush design outside and inside also with square-edged glass bead
- Integrated between the panes, therefore provides privacy and sun protection
- 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 SHADING**
Available upon request with photovoltaic blind, Venetian blind or Duette® with self-sufficient energy. Energy supply via integrated photovoltaic module, no extra fitting necessary, bi-directional wireless control.

**TRIPLE GASKET SYSTEM**
Three continuous gasket levels without interruption ensure high impermeability.

**MODERN INTERIOR DESIGN**
Square-edged glass bead with glazing thickness of 44 mm inside available upon request.

**SQUARE-EDGED EXTERIOR DESIGN**
This design in square-edged version is available exclusively with an aluminium clad.

**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 square-edged glass bead available upon request.

**SQUARE-EDGED EXTERIOR DESIGN**
This design in square-edged version is available exclusively with an aluminium clad.
**HF 200**

**TIMBER/ALUMINIUM WINDOW**

- Thermal insulation with standard triple glazing
  SOLAR+ and highly thermally insulating edge seal
  \(U_e = 0.81\) W/m²K
- Also available with 48 mm glazing \(U_e = 0.5\) W/m²K without krypton at best price/performance ratio
- Best thermal insulation \(U_w\) up to 0.70 W/m²K
  (with corresponding glazing)
- Soundproofing up to 47 dB
- 85 mm construction depth
- Classic, square-edged and straight exterior and interior design
- Highly thermally insulating thermal foam
  (HCFC, HFC and FC free)
- Triple gasket system
- Fully concealed hardware
- Designer locking parts
- Resistance class up to WK2
- Visible or concealed drainage
- Standard security

**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 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.

**MODERN GLASS APPEARANCE**

The timber/aluminium window HF 200 stands out through its modern, square-edged interior design.

**FULLY CONCEALED HARDWARE**

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

**INGENUOUS GLAZING SYSTEM**

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

**I-TEC GLAZING**

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

**HV 240**

**TIMBER/ALUMINIUM COMPOSITE WINDOW**

- Thermal insulation with standard triple glazing
  \(U_e = 0.90\) W/m²K \(U_w = 0.97\) W/m²K
- Best thermal insulation at low weight
  \(U_w\) up to 0.63 W/m²K (with 3light glazing) – passive house certified
- Soundproofing 44 dB as standard, 45 dB (with corresponding glazing)
- 85 mm construction depth
- Modern interior design with square-edged sash
- Integrated between the panes, therefore provides privacy and sun protection
- Fully concealed hardware
- Highly thermally insulating thermal foam
  (HCFC, HFC and FC free)
- Quadruple glazing upon request – passive house certified
- FIX-O-ROUND technology
- Visible or concealed drainage
- Triple gasket system
- Standard security

**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 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.
Harmonic shapes and the soft-line design of the home soft windows characterise the architecture of your building. The rounded Internorm window systems 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 meet your needs for 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
You can 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 47. An overview of all colours can be found on page 98.

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
You can choose between long-lasting UPVC, 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 47. An overview of all colours can be found on page 98.
<table>
<thead>
<tr>
<th>Material</th>
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<td>Georgian bars (glued-on and integrated Georgian/feature bars in different widths)</td>
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</tbody>
</table>
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.

### Handles

- **Standard handle**
  - Aluminium natural
  - Part no. 33899
- **Designer handle**
  - Steel
  - Part no. 34615
- **Designer handle Althina**
  - Chrome/stainless steel matt
  - Part no. 34596
- **Designer handle Bruxelles**
  - Chrome satin
  - Part no. 34592

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### 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.

- **Composite windows**: Integrated between the panes, therefore provide privacy and sun protection – 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 drop-down fly screen. Can be combined with sun protection

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### Colours

Here is a selection of colours as a recommendation, matching your home soft window. The complete colour range can be found in the overview from page 98.

#### Exterior colours
- M916
- HF735
- HPM02
- HMD04
- HMD05
- HM03
- HDH14
- HD903
- HD907
- HFM21

#### Interior colours
- White
- F916
- F901
- F902
- LA600
- LA601
- FI506
- FI508
- Oregon Decor
- Golden Oak

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### 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
- **Lift-and-slide door**
  - UPVC, UPVC/Aluminium
- **Sliding door**
  - UPVC, UPVC/Aluminium
- **Lift-and-slide 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 98 onwards.
KF 410
UPVC & UPVC/ALUMINIUM WINDOW
- Thermal insulation with standard triple glazing
  SOLAR+ and highly insulating edge seal
  \( U_g = 0.6 \, \text{W/m}^2\text{K}, \quad U_w = 0.79 \, \text{W/m}^2\text{K} \)
- Best thermal insulation \( U_w \) up to 0.62 W/m²K
  (with corresponding glazing)
- Soundproofing up to 45 dB (with corresponding glazing)
- 90 mm construction depth
- Triple gasket system
- Fully concealed hardware
- Visible or concealed drainage
- FIX-O-ROUND technology
- Resistance class WK1 and WK2 untested
  (upon request)
- Standard security
- Shortened aluminium attachment clad available upon request, for thermo-technical optimised construction connection

KF 200
UPVC & UPVC/ALUMINIUM WINDOW
- Thermal insulation with standard triple glazing
  SOLAR+ \( U_g = 0.7 \, \text{W/m}^2\text{K}, \quad U_w = 0.99 \, \text{W/m}^2\text{K} \)
- Best thermal insulation \( U_w \) up to 0.81 W/m²K
  (with corresponding glazing)
- Soundproofing up to 45 dB (with corresponding glazing)
- 71 mm construction depth UPVC/aluminium or 68 mm in UPVC
- Narrow view width up to 97 mm
- Triple gasket system
- Fully concealed hardware upon request
- FIX-O-ROUND technology
- Resistance class WK1 and WK2 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.

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

LIGHT GREY GASKETS
The gaskets in the UPVC version are light grey as standard.

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

I-TEC GLAZING
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.

I-TEC Glazing
**KV 340**  
**UPVC & UPVC/ALUMINIUM COMPOSITE WINDOW**

- Thermal insulation with standard triple glazing ($U_g = 0.95 \text{ W/m}^2\text{K}$), $U_W = 1.1 \text{ W/m}^2\text{K}$
- Best thermal insulation at low weight $U_W$ up to 0.79 W/m²K (with 3light glazing)
- Soundproofing up to 45 dB (with corresponding glazing)
- 83 mm construction depth
- Narrow view width up to 91.5 mm
- Integrated between the panes, therefore provides privacy and sun protection
- I-tec shading available upon request
- Triple gasket system
- Fully concealed hardware
- FIX-O-ROUND technology
- Visible or concealed drainage
- 5 chamber system
- Locking parts screwed into steel – from a certain window size on
- Passive house certified version available upon request

**HF 300**  
**TIMBER/ALUMINIUM WINDOW**

- Standard triple glazing SOLAR+ – for optimum energy efficiency
- Thermal insulation with standard triple glazing SOLAR+ ($U_g = 0.7 \text{ W/m}^2\text{K}$), $U_W = 0.86 \text{ W/m}^2\text{K}$
- 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 0.69 W/m²K (with corresponding glazing)
- Soundproofing up to 46 dB
- 93 mm construction depth
- Highly thermally insulating thermal foam, (HCFC, HFC and FC free)
- Fully concealed hardware
- Resistance class up to RC2
- Standard security
- Visible or concealed drainage
- FIX-O-ROUND technology
- Triple gasket system
- With additional thermal foam, also available as passive house certified component acc. to Passivhaus-institut Darmstadt

**OPTIMAL ISOTHERMAL GRAPH**  
Good thermal insulation, depicted by a favourable isothermal graph, ensures that the window will remain mostly free of condensation.

**PERFECT GLAZING THICKNESSES**  
With the HF 300, glazing thicknesses from 24 - 48 mm are available depending on requirements.

**INTERIOR DESIGN IN ITS PROPER STYLE**  
The glass bead which is glued on to the timber frame is rounded and matches the soft-line design perfectly.
HV 340
TIMBER/ALUMINIUM COMPOSITE WINDOW

- Thermal insulation with standard triple glazing
  \( U_\text{g} = 0.95 \text{ W/m}^2\text{K} \), \( U_\text{w} = 0.99 \text{ W/m}^2\text{K} \)
- Best thermal insulation at low weight
  \( U_\text{w} \) up to 0.63 W/m²K (with 3-light glazing)
- Soundproofing 44 dB as standard, 45 dB (with corresponding glazing)
- 93 mm construction depth
- Through installation between the panes (blinds, Venetian blinds or Duette blinds) protection from damage and weather, smooth operation and solar powered drive.
- I-tec shading available upon request
- Fully concealed hardware
- Highly thermally insulating thermal foam (HCFC, HFC 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.

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.

PASSIVE HOUSE CERTIFIED COMPONENT
HV 340 is also available in the certified version acc. to the Passivehausinstitut Darmstadt (PHI).

I-TEC SHADING
Available upon request with photovoltaic blind, Venetian blind or Duette® with self-sufficient energy. Energy supply via integrated photovoltaic module, no extra fitting necessary, bi-directional wireless control.
Classical 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**

You can 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 as well as gold and lead Georgian/feature bars.

**Colours**

The colour range – matching your ambiente windows – can be found on page 61. An overview of all colours can be found on page 98.

---

**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**

You can choose between long-lasting UPVC, 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 61. An overview of all colours can be found on page 98.
<table>
<thead>
<tr>
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<td>KF 410</td>
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<td>HV 340</td>
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### Thermal insulation (in W/m²K)
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<td>★</td>
<td>★</td>
</tr>
<tr>
<td>Turn and tilt/turn</td>
<td>★</td>
<td>★</td>
<td>★</td>
</tr>
<tr>
<td>Tilt</td>
<td>★</td>
<td>★</td>
<td>★</td>
</tr>
<tr>
<td>Sliding windows</td>
<td>★</td>
<td>★</td>
<td>★</td>
</tr>
<tr>
<td>Lockable doors</td>
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<td>★</td>
<td>★</td>
</tr>
<tr>
<td>Sliding doors</td>
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<td>★</td>
<td>★</td>
</tr>
<tr>
<td>Doors with threshold</td>
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<td>★</td>
<td>★</td>
</tr>
<tr>
<td>Outward opening doors</td>
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### Gaskets quantity
<table>
<thead>
<tr>
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<th>Timber</th>
<th>UPVC</th>
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### Bead gasket colour outside
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<thead>
<tr>
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<th>Timber</th>
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<th>UPVC</th>
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<tbody>
<tr>
<td>Bead gasket colour outside</td>
<td>black</td>
<td>black</td>
<td>light grey</td>
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</tbody>
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### Georgian bars
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<th>Timber</th>
<th>UPVC</th>
<th>UPVC</th>
</tr>
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<tbody>
<tr>
<td>Georgian bars</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

Coating SOLAR+ / LIGHT.

Best value

HV 340HF 300

Security

RC1, RC2

WK1, WK2

Thermal insulation

Uw = 0.86 / 0.79
Uw = n.a. / 0.99

HF 300

HV 340

KF 410

KF 200

KV 340

KF 410

KF 200

Soundproofing

34 – 46
42 – 45
34 – 45
33 – 45
38 – 45
34 – 45
33 – 45

Protection (in dB)

34 – 45
33 – 45
38 – 45
34 – 45
33 – 45

Soundproofing

RC1, RC2

WK1, WK2

Security

RC1, RC2

WK1, WK2

Locking

concealed
concealed
concealed
concealed

Dimensions mm

Frame construction depth
View width frame/sash
View width flying mullion (2 sashes)
View width transom (2 sashes)

Opening types

Fixed
Turn and tilt/turn
Tilt
Sliding windows
Lockable doors
Sliding doors
Doors with threshold
Outward opening doors

Gaskets quantity

3
3
3
3

Bead gasket colour outside

black
black
black
black
light grey
light grey

Georgian bars

(concealed on part and integrated Georgian feature bars in different widths as well as glued and lead Georgian feature bars)
**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.

**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.

- **Composite windows**: Integrated between the panes, therefore provide privacy and sun protection – choose between blinds, Venetian blinds or Duette®
- **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 drop-down fly screen. Can be combined with sun protection
- **Window shutter**: 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 98.

**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.

This range shows additional highlights of architecture – a recommendation matching the design style ambiente. Further designs can be found in the overview from page 98 onwards.
**KF 410**
**UPVC & UPVC/ALUMINIUM WINDOW**

- Thermal insulation with standard triple glazing
- SOLAR+ and highly thermally insulating edge seal ($U_\text{w} = 0.6 \text{ W/m}^2\text{K}$; $U_\text{g} = 0.79 \text{ W/m}^2\text{K}$)
- Best thermal insulation $U_\text{w}$ up to $0.62 \text{ W/m}^2\text{K}$
  (with corresponding glazing)
- Soundproofing up to 45 dB (with corresponding glazing)
- 90 mm construction depth
- Triple gasket system
- Gasket colour outside black or light grey (only in UPVC/aluminium version)
- Fully concealed hardware
- Visible or concealed drainage
- FIX-O-ROUND technology
- Resistance class WK1 and WK2 untested (upon request)
- Standard security
- 5 chamber system with highly thermally insulating thermal foam (HCFC, HFC and FC free)
- Shortened aluminium attachment clad available upon request, for thermo-technical optimised construction connection

**KF 200**
**UPVC & UPVC/ALUMINIUM WINDOW**

- Thermal insulation with standard triple glazing
- SOLAR+ ($U_\text{w} = 0.7 \text{ W/m}^2\text{K}$; $U_\text{g} = 0.99 \text{ W/m}^2\text{K}$)
- Best thermal insulation $U_\text{w}$ up to $0.81 \text{ W/m}^2\text{K}$
  (with corresponding glazing)
- Soundproofing up to 45 dB (with corresponding glazing)
- 71 mm construction depth UPVC/aluminium or 68 mm in UPVC
- Narrow view width up to 97 mm
- Triple gasket system
- Fully concealed hardware upon request
- FIX-O-ROUND technology
- Resistance class WK1 and WK2 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.

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

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

OUTSIDE GASKETS
With the UPVC/aluminium version you can choose between black and light grey gaskets for the outside.

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

I-TEC GLAZING
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.
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.

CERTIFIED VERSION
Frames made of composite materials with thermally insulating thermal foam (HCFC, HFC and FC free) and thermally broken reinforcement.

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

KV 340
UPVC & UPVC/ALUMINIUM COMPOSITE WINDOW
- Thermal insulation with standard triple glazing (Ug = 0.95 W/m²K) Uw = 1.10 W/m²K
- Best thermal insulation at low weight Uw up to 0.79 W/m²K (with 3light glazing)
- Soundproofing up to 45 dB (with corresponding glazing)
- 83 mm construction depth
- Narrow view width up to 91.5 mm
- Integrated between the panes, therefore provides privacy and sun protection
- I-tec shading available upon request
- Triple gasket system
- Black or light grey gaskets
- Fully concealed hardware
- Visible or concealed drainage
- FIX-O-ROUND technology
- 5 chamber system
- Locking parts screwed into steel – from a certain window size on
- Passive house certified version available upon request

HF 300
TIMBER/ALUMINIUM WINDOWS
- Thermal insulation with standard triple glazing SOLAR+ (Ug = 0.7 W/m²K) Uw = 0.86 W/m²K
- Also available with 48 mm glazing (Ug = 0.5 W/m²K without krypton) at best price/performance ratio
- Best thermal insulation Ug up to 0.69 W/m²K (with corresponding glazing)
- Soundproofing up to 46 dB
- 93 mm construction depth
- Highly thermally insulating thermal foam (HCFC, HFC and FC free)
- Fully concealed hardware
- Resistance class up to RC2
- Visible or concealed drainage
- FIX-O-ROUND technology
- Triple gasket system
- With additional thermal foam also available as passive house certified component acc. to Passivhausinstitut Darmstadt
- Standard security

OPTIMAL ISOThERMAL GRAPH
Good thermal insulation, depicted by a favourable isothermal graph, ensures that the window will remain mostly free of condensation.

PASSIVE HOUSE CERTIFIED COMPONENT
Technology®

INGENIOUS GLAZING SYSTEM
Glass panes glued to the timber frame ensure good structural stability and high torsion resistance.
HV 340
TIMBER/ALUMINIUM COMPOSITE WINDOW

- Thermal insulation with standard triple glazing
  \( U_g = 0.95 \text{ W/m}^2\text{K} \), \( U_w = 0.99 \text{ W/m}^2\text{K} \)
- Best thermal insulation at low weight
  \( U_w \) up to \( 0.63 \text{ W/m}^2\text{K} \) (with 3-light glazing)
- Soundproofing 44 dB as standard,
  45 dB (with corresponding glazing)
- 93 mm construction depth
- Through installation between the panes (blinds,
  Venetian blinds or Duette blinds) protection from
  damage and weather, smooth operation and solar
  powered drive.
- I-tec shading available upon request
- Fully concealed hardware
- Highly thermally insulating thermal foam (HCFC,
  HFC 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.
With architecture true to its original style, demands on design, security and energy efficiency of the windows are rising. Internorm, being the leader of innovations, sets higher standards in the brand. The new ingenious lift-and-slide door HS 330 and the new UPVC and UPVC/aluminium window KF 410 stand out through innovative technologies. Fully integrated locking, fully integrated ventilation, shading with self-sufficient energy – Internorm offers a series of revolutionary technologies under the title 'I-tec'.
The new timber/aluminium lift-and-slide door paves the way to unique perspectives. The narrow frame constructions and large glass areas allow generous amounts of light into the building creating a spacious living environment. The new glass fibre threshold technology together with standard triple glazing offers highest thermal insulation – also suitable for passive houses – and high torsion resistance. The low threshold prevents tripping hazards and is ideal for wheelchair accessibility.

The square-edged and modern design of the HS 330 stands out through a continuous aluminium appearance without glass beads inside or outside. It is available in all Internorm window colours and matches all timber/aluminium window systems perfectly. The integrated system parts in the sash are milled in flush and enhance the complete design of this lift-and-slide door.

The lift-and-slide door features a continuous timber appearance also in the fixed element. The patented glazing system enables glass exchanges even with completely rendered frames. You can choose between three handle versions whereby the design is adapted to the respective window system design style – rounded or square. Additionally, the lift-and-slide door can be equipped with Venetian blinds Raff F (Venetian blinds with cord tensioner), slats with light control (with Raff F and Raff S) and a wide insect protection frame.

**HS 330 TIMBER/ALUMINIUM LIFT-AND-SLIDE-DOOR**

- Thermal insulation $U_e$ up to 0.67 W/m²K, passive house suitable
- Standard triple security glazing with 54 mm glazing thickness for best thermal insulation
- 6 mm toughened glass panes protect from injuries when glass breakages
- Modern, square-edged appearance inside and outside
- All-glass corners for modern architecture
- Large-scale elements – easy lifting and sliding of the sash up to 400 kg sash weight
- From 150 kg sash weight on additional carriages on the bottom for perfect smooth running of the sash
- Highly thermally insulating glass fibre threshold for optimum thermal insulation and stability
- Low threshold – suitable for wheelchair access, covered with timber profile in the area of fixed element
- Guide rail – concealed in frame – with integrated bump stop – for perfect appearance, smooth running and optimum burglary protection
- Resistance class RC2
- Fixed element glazing is directly in the frame – no visible sash profile, more light through narrow view widths
- In closed state, sash is situated behind transom, therefore undisturbed view
- Opening width of the sash can be adjusted in such a way that the opening clearance is not reduced.
- Narrow frame profiles for greatest possible view – door can be rendered completely on three sides – therefore, only glass is visible from the side element
- Patented glazing system enables glass exchange even with completely rendered frame
- Three attractive handle designs
- Aluminium surface allows unlimited choice of colours

**INGENIOUS – THE NEW LIFT-AND-SLIDE DOOR HS 330**

The new timber/aluminium lift-and-slide door paves the way to unique perspectives. The narrow frame constructions and large glass areas allow generous amounts of light into the building creating a spacious living environment. The new glass fibre threshold technology together with standard triple glazing offers highest thermal insulation – also suitable for passive houses – and high torsion resistance. The low threshold prevents tripping hazards and is ideal for wheelchair accessibility.

**SOPHISTICATED TIMBER APPEARANCE**

The lift-and-slide door even features continuous timber design in the lower threshold area.

**PERFECT DESIGN**

No sash screwed into the fixed element, can be rendered on three sides – for perfect glass appearance.

**ENERGY SAVING GLASS FIBRE THRESHOLD**

For optimum thermal insulation and stability, low version for easy wheelchair access.
The revolution in window construction
The UPVC/aluminium or UPVC window KF 500 is equipped with a completely new locking system: Instead of protruding locking pegs integrated flaps ensure the safe locking of the sash. KF 500 offers high security without functioning restrictions in WK2 resp. RC2N (without lockable handle) as standard.

Modern design
The design is puristic, the view widths are 30 % less. With this narrow UPVC window there are no visible glass beads on the inside; sash and fixed glazing look identical from the outside. The high proportion of glass provides more light for the interior.

KF 500
UPVC & UPVC/ALUMINIUM WINDOW

- Thermal insulation with standard triple glazing LIGHT and highly thermally insulating edge seal ($U_e = 0.5 \text{ W/m}^2\text{K}$) $U_w = 0.73 \text{ W/m}^2\text{K}$
- Best thermal insulation $U_w$ up to $0.69 \text{ W/m}^2\text{K}$ (with corresponding glazing)
- I-tec locking: locking is fully integrated in sash – no visible locking parts in window frame, easy cleaning
- WK2 resp. RC2N as standard (without lockable handle) without functioning restrictions
- 30 % less view heights of frame and sash
- Puristic design – ideal for the design style home pure
- High glass proportion for more light
- Glass sash: same outside view with sash and fixed glazing
- No visible glass bead inside
- Optionally with I-tec ventilation: integrated, motoric ventilation with heat recovery (86 % efficiency) and pollen filter

Trendsetting innovations 2013

Outside view

Inside view
OUR TOP OF THE CLASS – THE NEW UPVC WINDOW KF 410

All of Internorm’s top features can be found in this new window: The standard version in the KF410 already stands out with great features like SOLAR+ glazing, FIX-O-ROUND technology, ISO spacers, fully concealed hardware and many more.

Top values

KF 410 is equipped with top values in all performance areas of a modern window system – from insulation and construction depth to security and design, standard ISO spacers and special coated triple insulating glazing SOLAR+.

With an overall energy transmission value (g) of 62 % on one hand it uses a large part of solar energy and due to the high insulation value (Uw = 0.79 W/m2K), on the other hand, it keeps the heat inside the building. With LIGHT coating (g value 50 %) and ISO spacers the new UPVC window achieves a top thermal insulation value of 0.72 W/m²K. Hardware and drainage is fully concealed.

Key to the high thermal insulation is the 5 chamber system with foam inserts and the triple gasket system. The construction depth of KF 410 is 90 mm, the glazing thickness is 48 mm. The window system is also available with an aluminium attachment clad and carries a 30 year warranty on functioning.
Revolutionary Technologies

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 also mould formation is prevented.

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.

Design
The I-tec ventilator is completely integrated into the new home pure window system KF 500. On the outside and inside of the window only narrow ventilation grids are visible. Contrary to conventional ventilation systems there is neither interference with the interior or exterior architecture nor high energy losses resulting from uncontrolled quick maximum air exchange or permanent airing. 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.

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 $U_{w} \leq 0.69 \text{ W/m}^2\text{K}$

Continuous fresh air for the whole room and your well-being
Narrow ventilation grids
No more visible locking parts – smooth, easy to clean UPVC surface
Locking flap

Internorm
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.

**Fix-O-Round technology**

The welded sash frame is tensioned from corner to corner. The glass pane is set into the frame and centred. The remaining gap between glass and frame is filled with glue all around. By fitting glass beads or cover beads the glue joint is covered.

**Revolutionary Technologies**

**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 composite sun protection – blind, Venetian blind or Duette®.

Photovoltaic sun protection with self-sufficient energy

All Internorm composite window systems 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 composite windows. The bi-directional control occurs via wireless – several blinds, Venetian blinds or Duette® blinds can be controlled in combination.

The bi-directional remote control offers the following additional functions:

- Lock/unlock function: You can lock your settings so that no one else can find them, save them or interfere with them – they become practically invisible.
- Individual fixed position: This enables you to allocate each blind/Venetian blind or Duette® a specific position and control it easily via a key combination.
OUTWARD OPENING BALCONY DOOR

The classic design of this outward opening balcony door is timeless with its slightly rounded outlines and shapes, and can be perfectly combined with various architectural styles – be it modern or traditional, new buildings or remodelling. The technology on the inside is highly convincing: Multi-chamber profiles make use of the insulating properties of air and therefore achieves high thermal insulation.

- Thermal insulation with standard triple glazing $U_g = 0.7\ W/m^2\ K$, $U_w = 1.0\ W/m^2\ K$
- Best thermal insulation, $U_g = 0.4\ W/m^2\ K$ with krypton filling, $U_w = 0.76\ W/m^2\ K$, passive house certified.
- Sound proofing 34 dB, Rw as standard, 44 dB, Rw with corresponding glazing
- Thermix glass spacer
- 5 chamber system with 70 mm construction depth
- Wall thickness 3 mm acc. to RAL-A class
- Fully concealed hardware
- Visible or concealed drainage
- Double gasket system with high-quality gaskets

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

ROUNDED EDGES
Harmony and aesthetics perfectly combined – achieved by rounding off all visible edges. This solid profile design can be integrated anywhere.

FULLY CONCEALED HARDWARE
As standard no visible hardware parts – for better appearance, easier to clean and above all for better impermeability from the inside.
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 fulfill 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 on to 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 of SOLAR+ you can achieve further solar gain resulting in additional natural heating.

**SOLAR+**

**INTERNORM’S NEW, ENERGY EFFICIENT STANDARD GLASS**

Internorm’s standard glass 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

Efficient use of energy is one of the most important measures against climate change. 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$_2$ and SO$_2$.

More light – more brillancy: SOLAR+

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

**Technical values triple glazing SOLAR+**

$U_g$ values acc. to EN 673:

- **SOLAR+ 36 mm**: 4b/12gAr/4/12gAr/b4 $U_g$ 0.8 W/m²K
- **SOLAR+ 40 mm**: 4b/14gAr/4/14gAr/b4 $U_g$ 0.7 W/m²K
- **SOLAR+ 42 mm**: 4b/15gAr/4/15gAr/b4 $U_g$ 0.7 W/m²K
- **SOLAR+ 44 mm**: 4b/16gAr/4/16gAr/b4 $U_g$ 0.7 W/m²K
- **SOLAR+ 48 mm**: 4b/18gAr/4/18gAr/b4 $U_g$ 0.6 W/m²K
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. Energy transfer through the windows is not only heat loss – due to the transparency of the glass, an energy gain is also achieved. If correctly planned with well laid out window surfaces (i.e. large south-facing window surfaces), the energy balance of the building can be influenced considerably.

A window’s thermal insulation depends on the frame material, the insulating 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 CO₂ through heating. The parameter of the heat transmission coefficient Uₜ is stated in W/m²K (Watt 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 Uₜ:

- Heat transmission through the glazing Uₜₛ
- Heat transmission through the frame Uₜₕ
- Linear heat loss coefficient of composite glass edge y

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°, day time \( t \leq 27 \) °C
- Upper limits in temperature t°, night time \( t \leq 25 \) °C

SoUNDPfooING

Interference of noise is unpleasant and can – given the right intensity and duration – affect the human body negatively. Noise is perceived through changes of air pressure, which are received through the human ear and passed on to 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 perceive a reduction of 10 dB as halving the noise. Soundproofing of a window is dependent on frame material, insulating glass, permeability of the window and the construction connection.

<table>
<thead>
<tr>
<th>Sound Source</th>
<th>Decibels</th>
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</thead>
<tbody>
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<td>Hearing threshold level</td>
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<tr>
<td>Pin dropping</td>
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NEW BUILDINGS

Build energy efficiently
Not only passive houses help with saving energy – also the conventional building of houses can help to save much energy and CO₂. The necessary know-how is of paramount importance. Your 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 your building. These details are very valuable for calculating different options at a later renovation or remodelling 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/m²a.

Window size and orientation
Position your windows mainly south-, west- and east-facing to be able to use the sun best. Large south-facing window areas create good energy balance and bring light and life into your rooms.

To avoid overheating of the rooms, consider in the planning stages to install sun protection systems. Additionally, insect protection systems can be integrated.

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 90.

Window solutions are an investment with a lasting value.
That is why Internorm develops trendsetting window solutions and is the only window manufacturer in Europe with nine passive house certificates from the Passivhaus Institut Darmstadt, Dr. Feist. In the market segment of highly thermally insulating windows, Internorm clearly is the market leader in Austria and Europe.

More energy efficiency using highly thermally insulating Internorm window systems
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Lower energy consumption FROM THE START
The most effective and also the most economical way to reduce these emissions, is to find measures to lower the energy consumption right from the start. This notion becomes even more interesting, if you note where these CO₂ emissions originate from: the well-known “sinner” industry and traffic each account for approximately a third, but roughly 40 % come from badly insulated buildings. As 25 to 30 % of the heat in a house escapes through the windows alone, this results in an increased need for heating and cooling. Using modern windows could already save tons of CO₂ every year. If all windows in an average house with 20 windows aged 25 years would be replaced with new passive house windows, every year almost two tonnes of CO₂ could be saved. In case these old windows are old single glazed windows, which are even less insulated, the number would rise to almost five tonnes.

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More energy efficiency using highly thermally insulating Internorm window systems
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For this reason, any quality conscious person carrying out remodelling works should make use of the security of a brand name. For only brand name windows will keep their promises in the long run: exactly fitting and individual windows and energy conservation solutions – highly thermally insulating, economic and environment friendly.

High energy prices, climate protection and the introduction of energy performance certificates all lead to the fact that an investment in sustainable remodelling of your house will pay off quickly. “Old energy dumps” can be easily replaced with modern, highly thermally insulated Internorm window systems, which will save heating costs.

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Passive house certified and certified Internorm window systems with triple glazing not only considerably reduce the annual CO₂ output, they are also extremely economic. Internorm, with all of its lowest energy and passive house window systems, is the first place to contact, when you want to stop “heating the outside through your windows”. Additionally, the standard energy efficient glass SOLAR+ will provide a gain in solar energy.

Thermal remodelling – just professional
Your demand when remodelling: less heating costs – more energy efficiency and sustainability – simply better quality of life! Internorm will be happy to fulfil your requirements and you will save doubly: on the one side low heating costs due to high energy efficiency – by improved window insulations and on the other side due to the correct and therefore impermeable construction connection.

For this reason, you can count on the best trained and certified installation professionals of your Internorm distribution partner!

For combining the best windows with the services offered by the highly qualified Internorm distribution partners will provide you with the following advantages: extremely long lifespan, high weather resistance and reliable functionality, long term living quality and warranties lasting for many years.
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 exemplarily: thermal insulating glazing as used in passive houses achieves U values of up to 0.4 W/m²K. The used glazing has two infrared reflecting coatings and is filled with argon or krypton. This brings inside surface temperatures of the glass pane near room air temperatures and the radiator under the window becomes unnecessary.

In comparison U values of conventional windows often lie at around 2 W/m²K. The overall energy transmission (g value) with triple glazed Internorm windows lies at around 50 %, depending on coating and gas filling. Using these window systems in the UK in south-facing houses achieves U values of up to 0.4 W/m²K. The used glazing has two infrared reflecting coatings and is filled with argon or krypton. This brings inside surface temperatures of the glass pane near room air temperatures and the radiator under the window becomes unnecessary.

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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.

Composite windows: Integrated between the panes, therefore provide privacy and protection from the sun – 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; optional with daylight deflection – 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: Completely fitted on to the window, can be combined with insect protection

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 drop-down fly screen. Can be combined with sun protection.

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

- No unnatural colour changes or cracked surfaces due to weather influences for white window and door profiles made of UPVC, with the exception of mitre cracks.
- No unnatural colour changes or cracked inside surfaces due to weather influences for foil-covered window and door profiles made of UPVC, with the exception of mitre cracks.
- No unnatural colour changes or cracked surfaces due to weather influences for anodised or powder-coated window and door profiles made of aluminium.
- No condensation between the panes of insulating glass.
- The function of the wood, thermal foam and aluminium profile compounds is guaranteed for all Internorm timber/aluminium window systems, provided that the Internorm installation and maintenance guidelines have been adhered to.
- The function of the adhesive and the sealing of insulating glass panes with the window profiles is guaranteed for all Internorm timber/aluminium window systems, provided that the Internorm installation and maintenance guidelines have been adhered to.
- The glue connection of glazed Georgian/feature bars.
- PVD coated door handles are guaranteed against corrosion if there is no mechanical damage.
- 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.
- No unnatural colour changes or surface cracks due to weather influences for roller shutter profiles made of UPVC.
- No unnatural colour changes or surface cracks due to weather influences for anodised or powder-coated roller shutter and blind profiles made of aluminium.
- The function of the window or door fittings is guaranteed, provided that the Internorm installation and maintenance guidelines have been adhered to.

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.

CORRECT FITTING IS OF PARAMOUNT IMPORTANCE!

Professional fitting of windows and doors is required for perfect functionality and long-term usability. Thermal insulation and impermeability play also an important role in building houses. Severe thermal loss can occur especially in the connecting area to the brickwork.

Practise has shown that this is the exact area where condensation and mould can form. Therefore, pay special attention to the right building connection – this depends on an impeccable installation. Fitting should only be carried out by trained personnel such as your Internorm distribution partner, who can guarantee you installations according to the most up-to-date technology, compliance to the standards and observance to the structural-physical principles which are necessary when installing 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 sill 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 rai plug 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 (leaving 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.
### Checklist for your window purchase

#### Which ventilation options do I need?
- continuous ventilation with or without fan
- fully integrated ventilation
- night-vent ventilation
- manual opening of window (tilt/turn)

#### Fitting of windows
- qualified specialist fitting with good practise standards (e.g. ÖNORM, RAL etc.)
- planning of fitting with good practise standards – together with Internorm distribution partner

#### Care and maintenance
- maintenance contract with qualified Internorm distribution partner
- maintenance through personal contribution
- observation of Internorm handbook/warranty, care and maintenance

#### Window quotes – When comparing always observe this:
- window measurements
- glazing
- hardware
- construction depth
- accessories
- surface version
- thermal and sound insulation values (acc. to test certificates)
- number of gaskets
- design
- certification mark
- integrated technologies

#### Warranty services
- on profiles (discolouration, cracks, show of condensation on insulating glass)
- on surfaces
- on glazing
- on function
- reliability of the window manufacturer as warrantor
- market brand as security

#### What services can I expect?
- measuring of windows
- detailed, transparent quotes with images
- fitting
- maintenance
- others

#### Please note:
- local construction regulations
- adherence to possible design templates
- funding
- delivery timescale

#### Price/performance ratio regards personal demands:
- manufacturing quality
- comprehensive warranties and longevity
- maximum energy efficiency – perfect thermal insulation – low heating costs
- climate protection: lower CO2 emission through superior thermal insulation
- burglary protection
- uncomplicated care and maintenance
- cost effective care and maintenance
- quick amortisation of the investment
- value retention for decades

---

### Reasons for window purchase
- new building
- remodeling

### Type of building
- single family house or block of flats
- low energy house
- passive house

### Selection of frame material
- timber/aluminium
- composite UPVC/aluminium and timber/aluminium
- UPVC/aluminium
- UPVC

### Window designs
- shapes (rectangle, round arch, angular construction, bespoke constructions etc.)
- fixed elements
- window divisions: single sash or several sashes, fan lights
- colours (all RAL colours, timber decor, metallic decor, stainless steel colours, timber colours etc.)
- glass
- Georgian/feature bars (divisions, types etc.)
- handles

### Opening types
- tilt/turn
- turn
- tilt
- fixed glazing
- lift-and-slide
- slide
- fold-and-slide
- lockable doors
- outward opening doors

### Products “all around the window”
- integrated sun and privacy protection - composite window
- sun and privacy protection (roller shutters, Venetian blinds, window shutters, inside blinds, photovoltaic blind, Venetian blind, Duette®)
- insect protection
- burglar protection
- additional features such as fully integrated ventilation, child proof lock, tread guard, closing protection, security glass etc
- designer handles
- house entrance doors

### Thermal insulation
- energy saving potential: saved heating costs due to highly thermally insulating windows
- passive house suitable thermal insulation \( U_E = 0.8 \) W/m²K
- low energy house suitable thermal insulation \( U_E = 0.8 \) up to 1.0 W/m²K
- higher thermal insulation \( U_E = 1.0 \) up to 1.2 W/m²K
- standard version \( U_E = 1.2 \) up to 1.3 W/m²K

### Soundproofing
- high noise level (e.g. airport, railway tracks, heavily frequented roads) – needs soundproofing with \( R_N = 40 \) dB
- medium noise level (e.g. normal road traffic, longer distances from sound sources) – needs soundproofing with \( R_N = 36 \) to 39 dB
- low noise level (e.g. rural housing) – needs soundproofing with \( R_N = 32 \) to 35 dB
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 Rw value – the tighter a window closes, the better the insulation performance.

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

Rₜₐₜₐₜ = thermal insulation of the respective glazing

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

### 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 Rw value – the tighter a window closes, the better the insulation performance.

#### Thermal Insulation and Soundproofing Values for Windows

- **Composite window**
- **Timber/aluminium window**

#### Table: Thermal Insulation and Soundproofing Values

<table>
<thead>
<tr>
<th>Glass Code</th>
<th>Glass</th>
<th>Uₜₐₜₐₜ (W/m²K)</th>
<th>Rw (dB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4/3bESG/10Kr/2TVG/10Kr/3bESG</td>
<td>LIGHT</td>
<td>0.49</td>
<td>43</td>
</tr>
<tr>
<td>6/3bESG/10Kr/2TVG/10Kr/3bESG</td>
<td>LIGHT</td>
<td>0.64</td>
<td>40</td>
</tr>
<tr>
<td>4/3bESG/12Ar/12TG/10Kr/3bESG</td>
<td>LIGHT</td>
<td>0.50</td>
<td>40</td>
</tr>
<tr>
<td>6/3bESG/12Ar/12TG/10Kr/3bESG</td>
<td>LIGHT</td>
<td>0.60</td>
<td>38</td>
</tr>
<tr>
<td>4/8/14Ar/b4</td>
<td>LIGHT</td>
<td>1.00</td>
<td>36</td>
</tr>
<tr>
<td>6/6/14Ar/b4</td>
<td>LIGHT</td>
<td>1.40</td>
<td>34</td>
</tr>
<tr>
<td>4/4ESG/16Ar/b4</td>
<td>LIGHT</td>
<td>2.00</td>
<td>32</td>
</tr>
<tr>
<td>6/4ESG/16Ar/b4</td>
<td>LIGHT</td>
<td>2.80</td>
<td>30</td>
</tr>
<tr>
<td>4/4bESG/8Kr/4/8bESG</td>
<td>LIGHT</td>
<td>0.20</td>
<td>38</td>
</tr>
<tr>
<td>6/4bESG/8Kr/4/8bESG</td>
<td>LIGHT</td>
<td>0.30</td>
<td>36</td>
</tr>
</tbody>
</table>
For print and production reasons, colour deviations between images in the Window book and the original products are possible. Your Internorm distribution partner will gladly show you original colour samples. 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

### 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

For print and production reasons, colour deviations between images in the Window book and the original products are possible. Your Internorm distribution partner will gladly show you original colour samples. 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
COLOUR OVERVIEW

**SURFACES AND COLOURS: INTERNAL SIDE OF WINDOW**

**UPVC**
- UPVC white

**TIMBER**
- Standard colour spruce, varnished
  - FIS00
  - FIS01
  - FIS02
  - FIS03
  - FIS04

- FIS05
  - FIS06
  - FIS07
  - FIS08
  - FIS09

- Standard colour larch, varnished
  - LA600
  - LA601
  - LA602
  - FIS916

- Timber type spruce
  - Golden oak

- Timber type larch

**Decor foils**
- Brilliant white
- Cream white
- Oregon decor

* For all UPVC window systems except KF 500, KF 400 and KF 405

**SURFACES AND COLOURS: EXTERNAL SIDE OF WINDOW**

**ALUMINIUM ATTACHMENT CLAD**

**Standard colours**
- M916
- HM113
- HM736
- HM506
- HM704
- HM907
- HM803
- HM817
- HM768

**Stainless steel colours**
- HM504
- HM716
- HM505

**Metallic decor colours**
- EL01 Stainless steel matt look
- EL02 Stainless steel gloss look
- DM01 Dark green
- DM02 Grey
- CM03 Dark grey

**HDS colours**
- HDS01 Light grey
- HDS02 Light brown
- HDS03 Middle brown
- HDS04 Dark brown

**Timber decor colours**
- 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.

**HDS colours**
- HDS05 Intensive colour appearance, however colour tolerances possible.

**Hirest colours**
- HF916
- HF113
- HF735
- HF704
- HF716
- HF817
- HF768
- HF304
- HF805

**UpVC**
- UPVC white

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.

**Special colours**
A variety of design possibilities are offered by the Internorm RAL colour range (façade quality).
TRENDSSETTING SOLUTIONS FOR WINDOWS AND DOORS

Internorm is Europe’s largest window brand with over 20 million window units produced. Internorm is not just the market leader, but the knowledge leader – due to its extensive experiences since 1931.

As a pioneer in the field, Internorm was the first licensee to manufacture UPVC windows in Austria. The foresight of the company, technological know-how and an excellent feel for design led to continuous peak performances.

As the only window brand in Europe with nine passive house certificates, Internorm represents the leading expertise in energy efficient windows and doors, and is the market leader in Europe for highly thermally insulating window systems.

You can rely on our market leading product quality and specialist dealers of high competency, right from the initial consultation, through to installation, and up to after sales service. With Internorm you acquire the highest security, increase the quality of life and the value of your home.
Headoffice

Internorm Windows UK Ltd

Unit D, Colindale Business Park
2-10 Carlisle Road, NW9 0HN, London
Tel.: +44 (0) 208 205 9991
Fax: +44 (0) 208 905 8744
E-Mail: office@internorm.co.uk

www.internorm.at
www.internorm-fenster.de
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