



## Innovations & Technologies 2013



## 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 experience. 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 its 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  $U_w$  up to **0.71 W/m<sup>2</sup>K**, 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**



**I-tec** Glazing



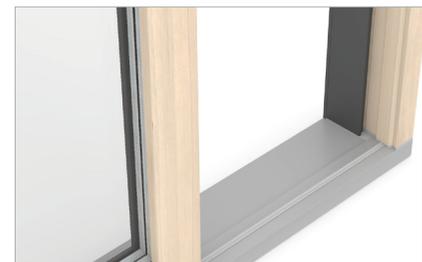
#### SOPHISTICATED TIMBER APPEARANCE

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 convenient passing.

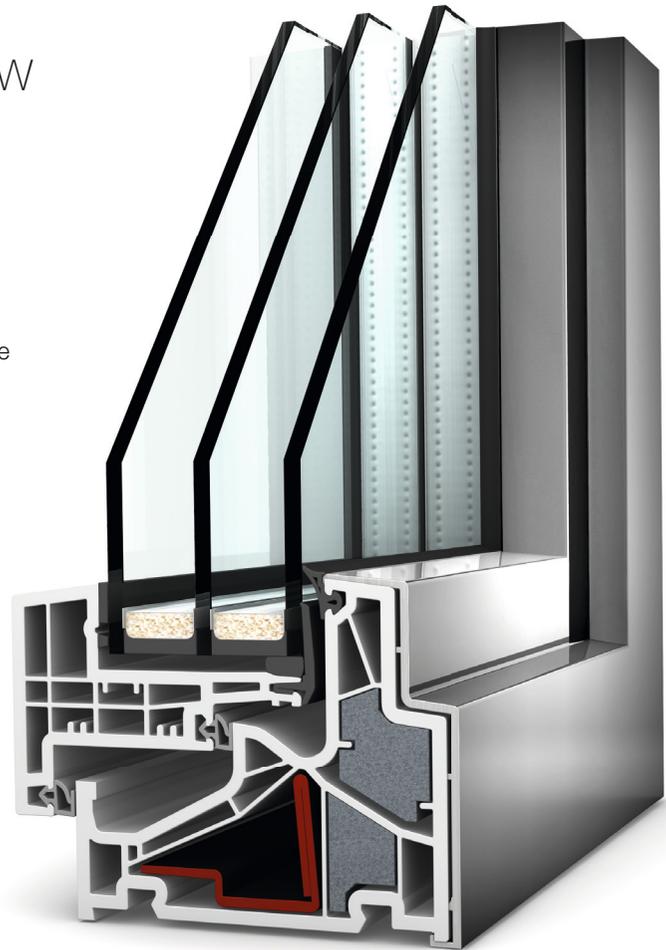
**Internorm**

# UPVC window KF 500

## KF 500

### UPVC & UPVC/ALUMINIUM WINDOW

- Thermal insulation with standard triple glazing LIGHT and highly thermally insulating edge seal ( $U_g = 0.5 \text{ W/m}^2\text{K}$ )  $U_w = 0.73 \text{ W/m}^2\text{K}$
- 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 or 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



**I-tec** Locking

**I-tec** Ventilation

**I-tec** Glazing



Outside view



Inside view

## 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  $0.62 \text{ W/m}^2\text{K}$**  (with corresponding glazing)
- Soundproofing up to 45 dB (with corresponding glazing)
- 90 mm construction depth with 48 mm glazing
- ISO spacer as standard
- Available in the three design styles: home pure, home soft and ambiente
- Triple gasket system
- Fully concealed hardware
- Drainage visible or concealed
- 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)
- Upon request with shortened aluminium attachment clad for thermo-technical optimised construction connection



DESIGN STYLE: HOME PURE



INSIDE VIEW: HOME PURE



DESIGN STYLE: HOME SOFT



DESIGN STYLE: AMBIENTE

# 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

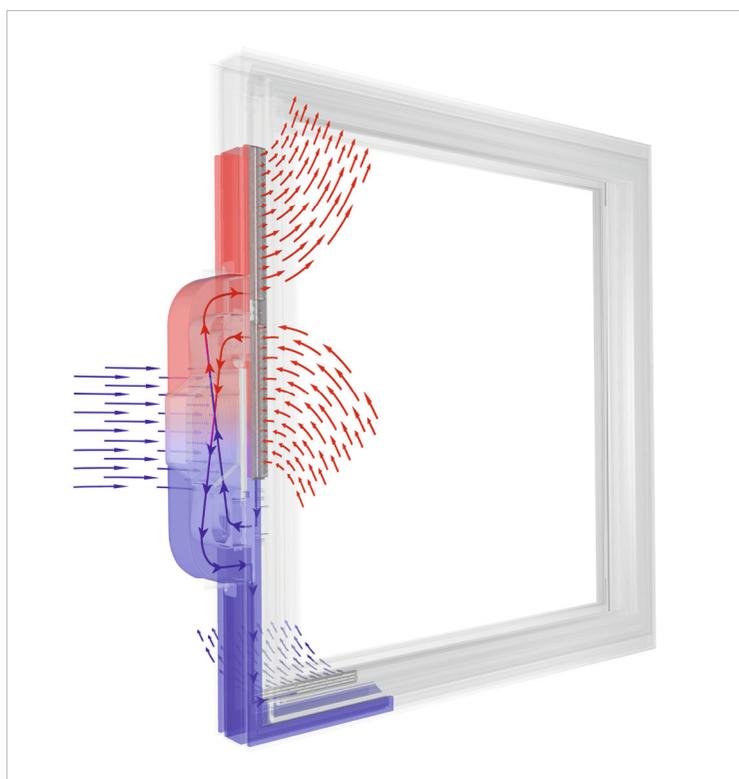
inside of the window only narrow ventilation grids are visible. Contrary to conventional ventilation systems, there is neither interference with the interior or exterior architecture, nor high energy losses resulting from uncontrolled quick maximum air exchange or permanent airing. Fitting the ventilator 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.



Continuous fresh air for the whole room and your well-being



Narrow ventilation grids

## 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  
 $U_w \leq 0.69 \text{ W/m}^2\text{K}$



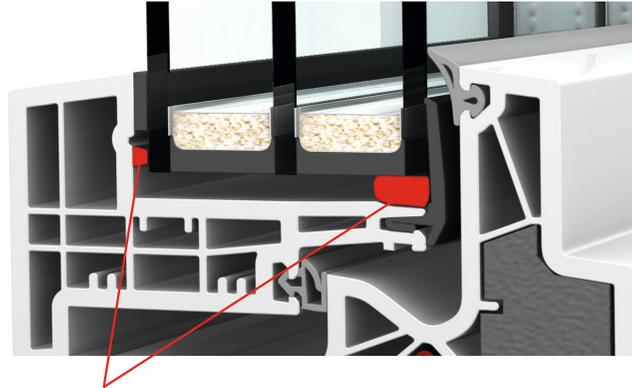
No more visible locking parts – smooth, easy to clean UPVC surface



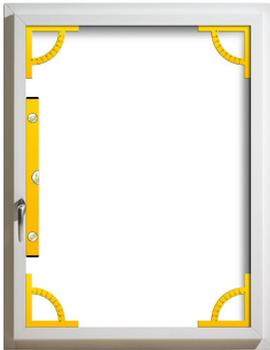
Locking flap

## INNOVATION ALL AROUND

Many window panes are only connected to the frame in very few positions. Internorm uses FIX-O-ROUND technology as standard for a continuous all round fixing. The advantage of this technology lies in the continuous connection of the window frame with the glass pane. This improves stability, thermal insulation and soundproofing, burglary protection and functioning of the window for its entire lifespan.



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.



## I-tec Shading

### 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.

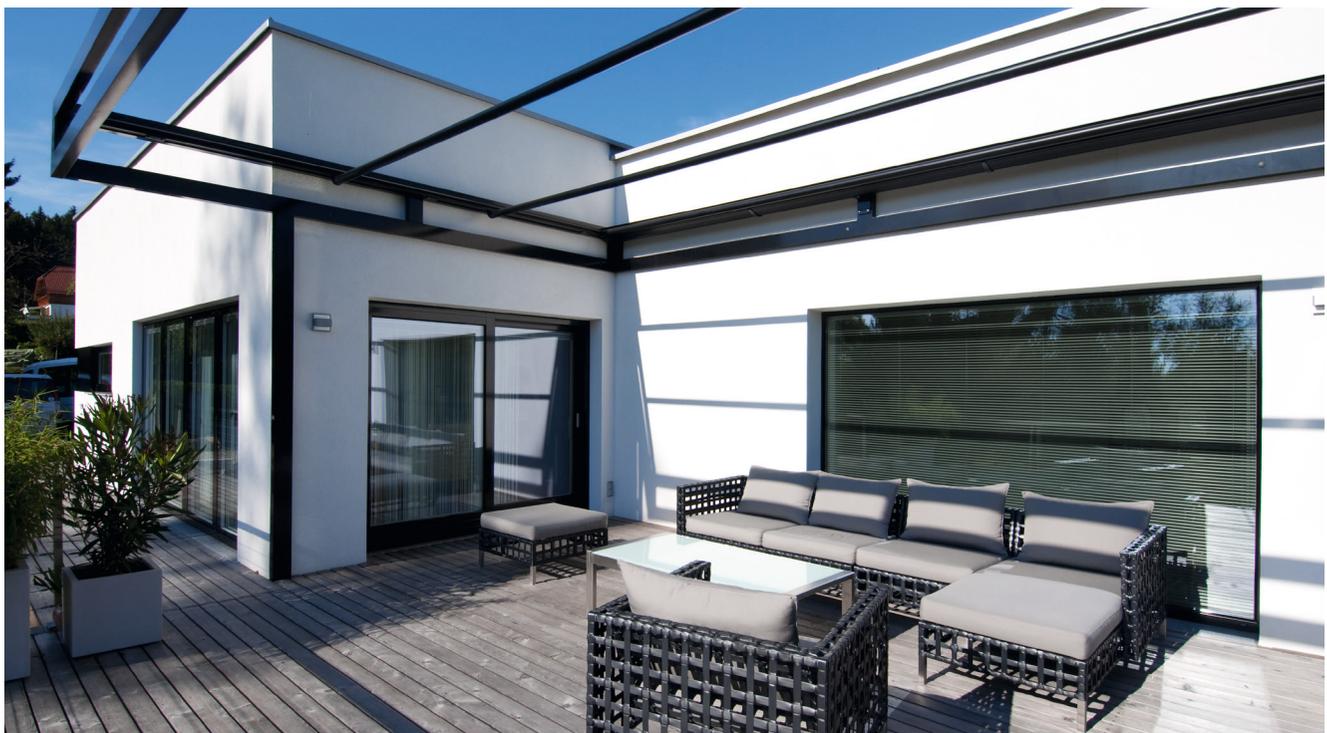
#### Advantages:

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 enable you to allocate each blind/Venetian blind or Duette® a specific position and control it easily via a key combination.



## HT 410

### FLUSH AND HIGHLY THERMALLY INSULATING

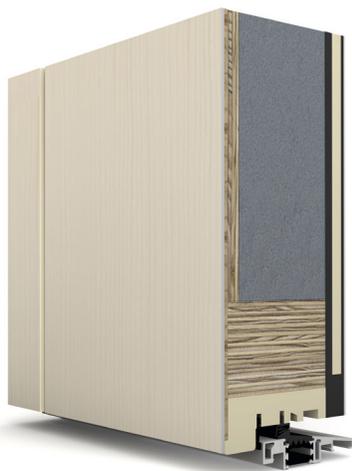
The **studio** entrance door **HT 410** is flush into the smallest detail and equipped with top security.

Internorm **studio** doors of the series **HT 410** made of the composite material timber/thermal foam/aluminium are technologically clever solutions and energy efficient.

They stand out through perfectly shaped, completely flush exterior and interior design – from frame to sash to concealed door hinges, flush integrated recessed handles and key hole cover plates.

#### TRENDSETTING ADVANTAGES

- Highly thermally insulating timber/thermal foam/aluminium composite system,  $U_b$  up to  $0.58 \text{ W/m}^2\text{K}$
- Modern, completely flush design, concealed door hinges
- Construction depth 121 mm
- High security up to resistance class WK2



Inside view



#### COMPLETELY CONCEALED DOOR HINGES

Perfect design till the door hinges – contrary to conventional door hinges (image on the right), these are fully concealed (image on the left).

## AT 410

### FLUSH AND PERFECTLY SHAPED

The **studio** entrance door **AT 410** is flush into the smallest detail and equipped with top security.

Internorm **studio** doors of the series **AT 410** made of aluminium are technologically clever solutions and energy efficient.

They stand out through perfectly shaped, completely flush exterior and interior design – from frame to sash to concealed door hinges, flush integrated recessed handles and key hole cover plates.

#### TRENDSETTING ADVANTAGES

- Excellent thermal insulation  $U_D$  up to  $0.78 \text{ W/m}^2\text{K}$
- Completely flush design – outside and inside
- Concealed door hinges
- Construction depth 93 mm
- High security up to resistance class RC2



Inside view



#### FLUSH

Handle and key hole cover plates fit in perfectly with the flush design.

**Internorm**



## 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.



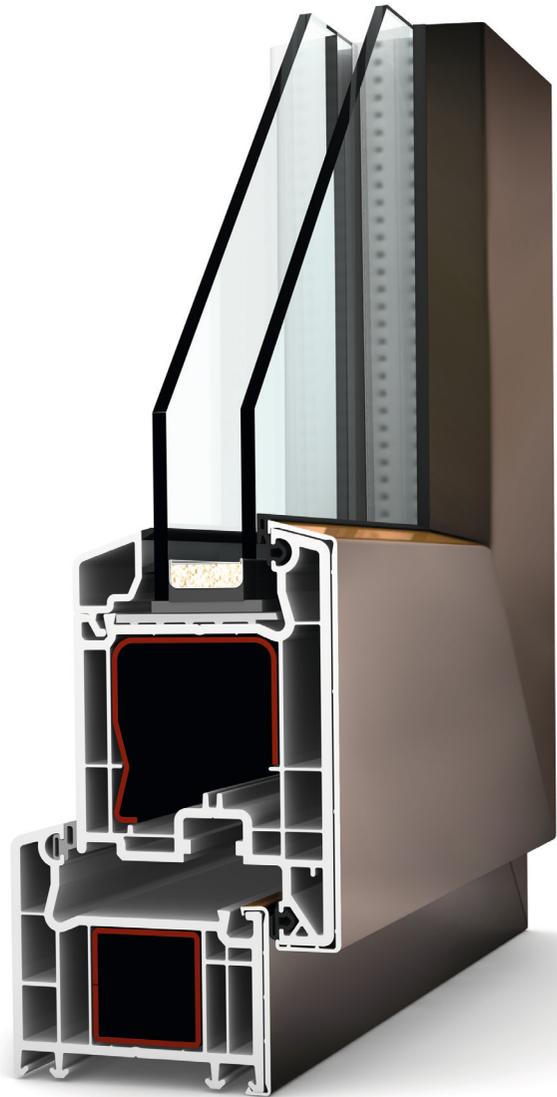
exterior view



interior view

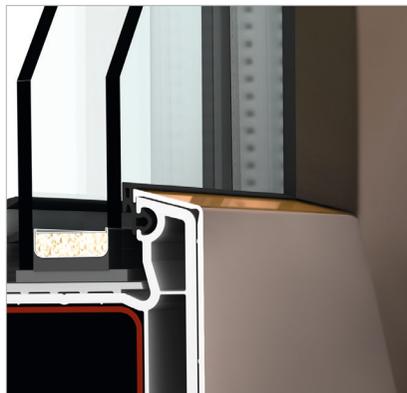
# OUTWARD OPENING BALCONY DOOR

- Thermal insulation with standard triple glazing  
 $U_g = 0.7 \text{ W/m}^2 \text{ K}$ ,  $U_w = 1.0 \text{ W/m}^2 \text{ K}$
- Best thermal insulation,  $U_g = 0.4 \text{ W/m}^2 \text{ K}$  with krypton filling,  $U_w = 0.76 \text{ W/m}^2 \text{ K}$ , passive house certified.
- Sound proofing 34 dB,  $R_w$  as standard, 44 dB,  $R_w$  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.

**Internorm**

Europe's No. 1 Window Brand



## TRENDSETTING 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.

## CERTIFICATIONS AND AWARDS



Austrian State Emblem



Austrian Quality Label



CE certification



TÜV



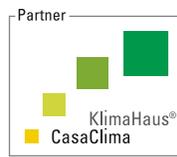
Institute for Window technology Rosenheim



Passive House Institute Dr. Feist, Darmstadt



RAL Quality Seals



KlimaHaus Certificate



Minergie® Certificate



Energy Globe (Project Schiesthaus)



Interest Group Passive House Austria



Climate Association Town Traun



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More information about our innovations and technologies as well as all other Internorm products can be found on the Internorm [1<sup>st</sup>] window portal under <http://portal.internorm.com/>

## Internorm Windows UK Ltd

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

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