

COMFORT. DESIGN. ENERGY. SUSTAINABILITY



**OPTIWIN**

## A VIEW TOWARDS ENERGY SAVINGS

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OPTIWIN is an international network of medium-sized window manufacturers and timber home builders. The partners develop, manufacture and market energy-efficient and visually appealing windows, doors, and facades.

# PLUS

POINTS

A good decision for  
mind and soul.

## WINDOWS FOR COMFORT

### Comfort and cosiness

OPTIWIN products create cosy interior spaces. Their sophisticated design provides for outstanding insulation. During winter, the interior panes are at room temperature. The windows do not cool down the interior air, which normally causes an uncomfortable chilled feeling. The energy efficiency of the products is appropriate for any passive house, too, and reduces energy costs on top.

### Wood windows create atmosphere

We view windows as design elements. Like furniture, they act as personalized and individualized accents for a comfortable atmosphere. Wood is a living material whose visual and textural qualities open up unique opportunities.

### Sustainable materials

The materials that comprise a product also contribute to positive feelings. That is why domestic woods without harmful

treatments are used. But another natural material with high insulation performance is also put to good use: sheep wool. All OPTIWIN products can be completely dismantled and the individual components recycled.

### Quality

The love of quality and a flawless product can be seen in every small detail. Our passion is to innovate with outstanding craftsmanship and technological know-how. That is how OPTIWIN products ensure comfort, safety, and flawless service from master craftsmen.

### A good investment

Longevity is one way that OPTIWIN products exhibit quality. For example, the outer layer of our wood windows use highly durable wood types capable of withstanding harsh elements. Our aluminium window frames have an extended lifetime and require no maintenance, yet are easy to replace if needed.



OPTIWIN is skilled at exploiting the properties of natural materials.



As a living material, wood has attractive textural and visual qualities.

# DESIGN

STRENGTH

## CLASSIC VALUES, MODERN SHAPES

### Wood in all its variety

The characteristics exhibited by all types of wood, such as naturalness, warmth, and cosiness, make it a valued material among planners and builders. It offers a virtually infinite range of design possibilities with unbeatable comfort. The unparalleled craftsmanship of OPTIWIN products, combined with the qualities of the natural material, allow every architect to communicate their own style. OPTIWIN merges the tradition of wood with modern architectural expression.

# DESIGN

VARIETY



## INDIVIDUALLY ADAPTABLE DESIGN

### **Harmony and clarity**

Planners and builders desire products that are in harmony with their overall design. Large-area glazing, quality design, and – last but not least – optimal product quality are in higher demand than ever. Whether designing an upscale country home for a private owner or a puristic cubical apartment building, individually adaptable design solutions make the difference.

# DESIGN

QUALITY



PLENTY OF  
SPACE FOR  
NEW IDEAS

#### Setting the desired tone

Whether for highly rasterised façades with gentle lines, visible wood construction in comfortable interior spaces, or window profiles that provide strong visual accents in the facade: OPTIWIN products ensure highly individualized results with the best craftsmanship quality. They are energy-efficient and have the benefit of using a base material that is sustainable to its core – wood.



## MODERN CRAFTS- MANSHIP

### Maximum performance

Windows and doors from OPTIWIN fulfil the most stringent requirements for energetically high-performance facades. These internationally tested window and door systems follow a timeless and classic design that can be made to reflect individual preferences. All OPTIWIN products are available in attractive wood varieties and can be combined as desired.

### Individual design

Depending on preferences, special wood varieties like walnut are available. This allows the products to be in harmony with the interior architecture. Natural oils and thin or thick glazes provide plenty of room for individual colour arrangements.

### Top-quality furniture as standard

Durable hinges, matching grips with styles for every system, strong sealing bands, and high-quality triple glazing with the best available warm edge spacers: These quality features are standard equipment for all OPTIWIN window systems.

### Innovative design

All OPTIWIN window systems utilize double layer construction for a statically weight-bearing design. This makes it easy and trouble-free to replace the outward-facing layer if needed.

### Quality is in the details

All designs utilize at least three seals and two drainage levels as standard. This ensures the highest possible safety during storms and driving rain in addition to optimized soundproofing and thermal comfort.

### Highest available stability

On all current OPTIWIN window systems the panes are adhered directly to the frame. This gives windows and lifting/sliding doors outstanding statics and provides the best possible protection against cold, wind, and noise.



OPTIWIN uses high-quality components as standard.



The second drainage level ensures the best possible protection against driving rain.



OPTIWIN: Innovative designs with double-leaf construction.

### Solutions for sustainable buildings

For us, windows are more than individual elements to be viewed in isolation. They are always components of a larger system – the building. We develop our products with this holistic understanding of comfort, sustainability, and construction physics: Visually attractive windows and doors for buildings with low energy needs, passive homes, and energy-plus homes.

### Reduce costs

OPTIWIN window systems save energy and spare the pocket-book. In addition, OPTIWIN products improve the CO<sub>2</sub> balance of a building throughout its entire lifetime.

### Creating cosiness

OPTIWIN window systems are highly heat-insulating. Unlike most standard windows, the inside surface temperature of

OPTIWIN windows is virtually the same as the room temperature. This provides outstanding comfort, prevents condensation, and helps avoid the growth of mould.

### Using design freedom

Due to the excellent heat insulation, cold air downdraughts at the windows are prevented. This eliminates the need for heaters underneath windows, freeing up more space for unrestrained and individualized interior design.

### Consultation has its benefits

Upon request we are happy to perform calculations of surface temperatures, Psi values, condensation zones, and help with detailed planning.

### Complete renovation solution

When renovating buildings, new windows provide a higher level of comfort and reduce heat losses. But the installation of impermeable and heat-insulating windows and doors in an existing building changes the interior climate and must be carefully planned and executed. That is why OPTIWIN is ready to provide a complete renovation solution, a service that earned it the prestigious Passivhaus Component Award in 2015.

### Properly integrating windows

One key to successful renovation is the technically correct integration of new windows into the existing building. The OPTIWIN CONNECTA system provides all of the components for optimal merging of an OPTIWIN window into the renovated building. These components fulfil all expectations for sound-proofing, sun protection, etc. and define pertinent levels and points for the various trades involved in the building project.

### Taking stock of what you have

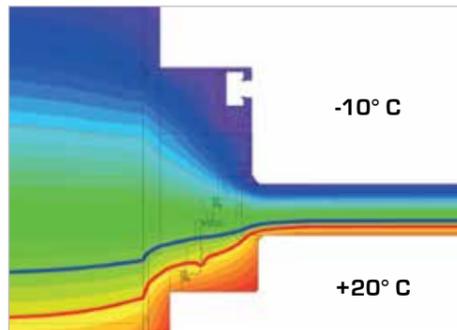
Since good products alone are not enough, members of the OPTIWIN network are happy to advise architects and builders during planning. This includes detailed calculations about the building's physical requirements.

### Preserving historic structures

The double layer design of OPTIWIN window systems makes it possible to fulfil specific requirements for the preservation of historic structures with highly energy-efficient wood windows. The outer protective layer of the windows is removed and can be replaced by new wood profiles that re-create the original.



Atmospheric wood windows for sustainable buildings.



OPTIWIN window system: Energy performance at the highest levels.



OPTIWIN window systems are more than just building components – they actually contribute to functionality and design.



All OPTIWIN window and door systems are certified by the Passive House Institute of Darmstadt.



OPTIWIN window systems are outstanding for renovation projects.



Passivhaus Component Award 2015 for OPTIWIN: Watch the video.

## OPTIWIN PURISTA

### THE WINDOW FOR PURISTS

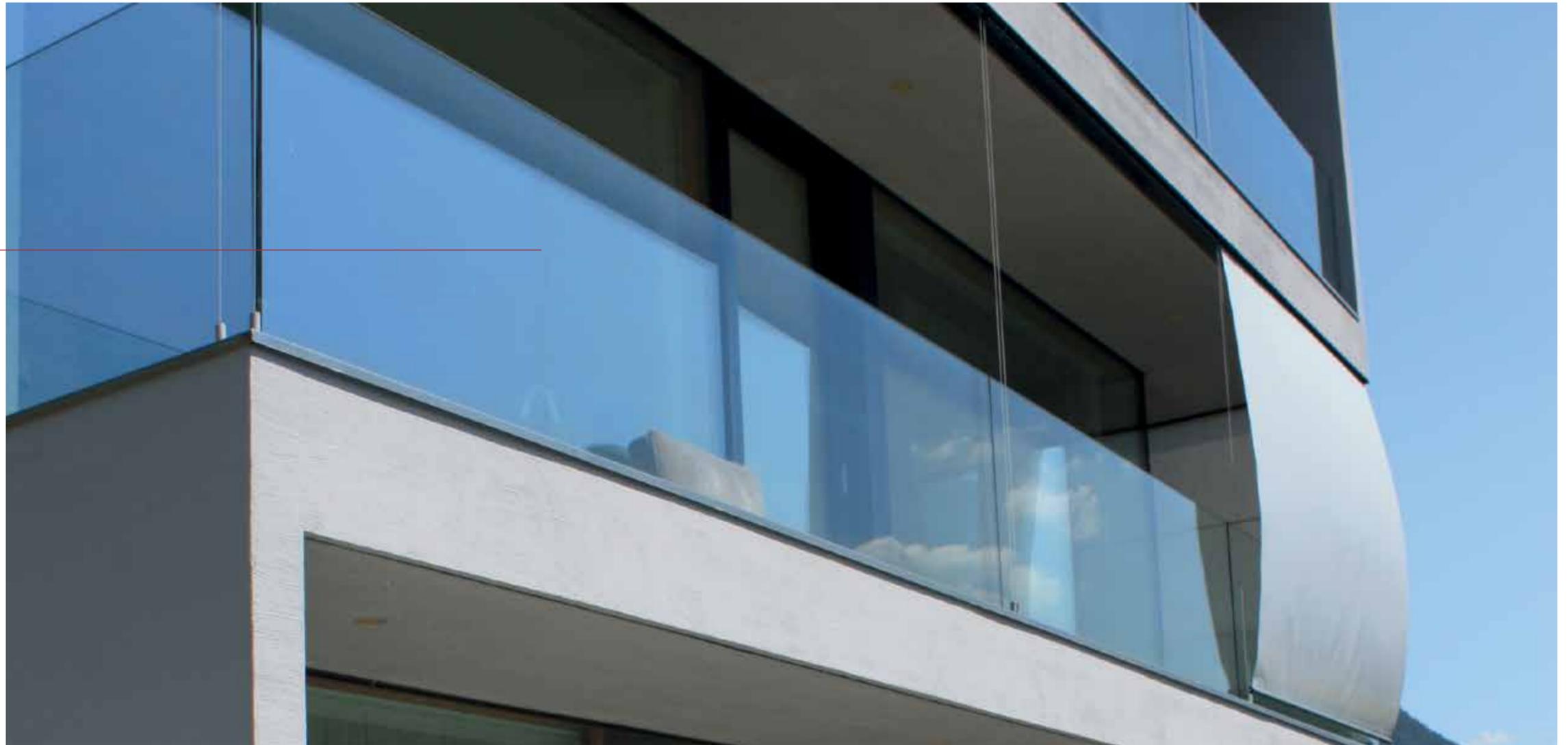
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#### Timeless design

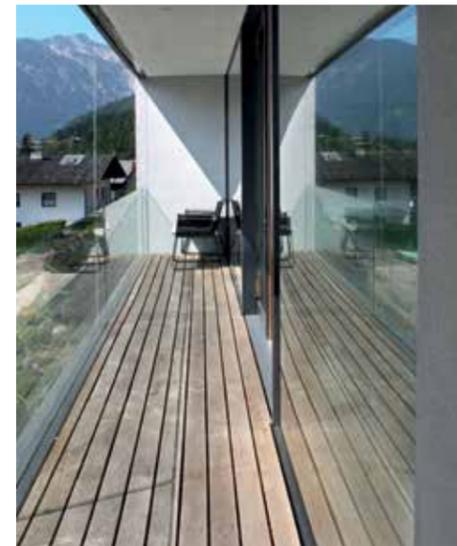
The OPTIWIN PURISTA window system is a clear and timeless design with the highest technical quality. The special design enables an exterior appearance of pure glass. This is true both for window sashes as well as for stationary elements.

The glass surface not only provides an attractive, puristic appearance, but also protects the frame from the elements. The regular maintenance that is normally required for wood-framed windows is unnecessary.

OPTIWIN PURISTA has an extremely slender profile. The overall internal view width of the frame and sash is just 90 mm. The frame can be insulated right up to the sash, further enhancing its minimalist appearance.



The frame and window panes of OPTIWIN PURISTA windows are held together with adhesive, providing for outstanding static properties.



With its narrow frame, OPTIWIN PURISTA makes the most out of available sunlight.



The triple glazing maximizes heat insulation while reflecting a puristic design.

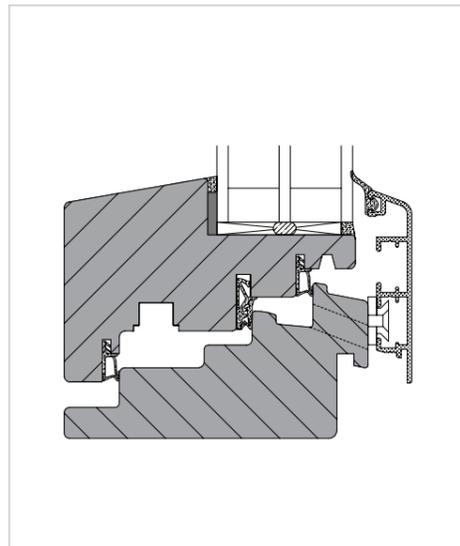
## OPTIWIN PURISTA

The OPTIWIN PURISTA window system is ideally suited for passive homes. Like all OPTIWIN window systems, OPTIWIN PURISTA can accept glazing that is up to 60 mm thick, for extreme heat transfer of up to 0.64 W/m<sup>2</sup>K. The refined design of the window system also results in an installation-optimised thermal bridge.

Because of these benefits, the window system is certified by the Passive House Institute of Darmstadt as A-components for the highest energy-efficiency requirements.



The reduced shadow gap underscores the puristic design.



The refined design provides optimized protection against driving rain and high winds.

- Window types \_\_\_\_\_ Suitable for all window types
- Wood types \_\_\_\_\_ Fir, spruce, larch, oak. Special wood types such as walnut are available for interior use.
- Interior view \_\_\_\_\_ Wood with individualized colour arrangements: Natural oils, thin or thick glazes
- Exterior view \_\_\_\_\_ Full glass appearance
- Special functions \_\_\_\_\_ Sound, sun, and break-in protection
- U<sub>w</sub> value \_\_\_\_\_ up to 0.64 W/m<sup>2</sup>K
- U<sub>g</sub> value \_\_\_\_\_ up to 0.5 W/m<sup>2</sup>K
- Energy efficiency \_\_\_\_\_ Window system certified by the Passive House Institute PHI Darmstadt: A-components



Full frame insulation increases the thermal comfort and performance.

# THE WEATHER-PROOF WOOD WINDOW

### Tough as nails

OPTIWIN LIGNUMA offers a narrow frame, elegant design, and individual colour patterns for interior and exterior. Weather-resistant wood types are ready to withstand the elements and give the window a removable external protection layer. The external layer can be replaced if needed, virtually eliminating the need for surface treatment. The interior layer is made of wood types with favourable density and outstanding static characteristics.

OPTIWIN LIGNUMA fully exploits the atmospheric traits of wood. If desired, special wood types such as walnut, zebrawood, or apple can be provided for interior use. Natural oils and thin or thick glazes provide plenty of freedom for individualized colour arrangements. OPTIWIN LIGNUMA is synonymous with cosiness and natural radiance.

OPTIWIN LIGNUMA is also ideal for renovations. With special, individually produced profiles, OPTIWIN can reliably provide solutions for any requirement.



Wood is a special material that offers attractive design opportunities for interiors as well as exteriors.



Window designs can have glass thickness of up to 60 mm, delivering extremely high heat insulation performance.

## OPTIWIN LIGNUMA

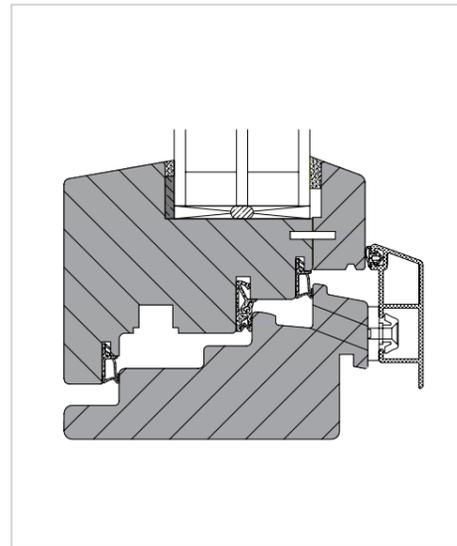
OPTIWIN LIGNUMA has an impressive heat transfer coefficient of up to  $0.65 \text{ W/m}^2\text{K}$ . This outstanding performance has earned the window system certification as an A-component by the Passive House Institute of Darmstadt.

Four seals and two drainage levels give them exceptional security against wind and weather in addition to outstanding noise protection and thermal comfort.

The frame and glass panes are adhered together for optimal insulation and static properties. With OPTIWIN LIGNUMA CLASSIC and OPTIWIN LIGNUMA MODERN the hinges may be visible or hidden in the window design, as desired.

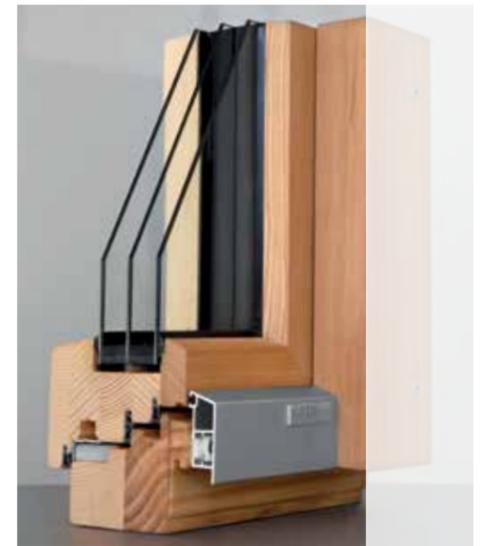


The design of OPTIWIN LIGNUMA is coordinated with all other OPTIWIN window and door systems for easy combinations.



Double layer construction: the exterior wood layer can be replaced.

- Window types — Suitable for all window types
- Wood types — Fir, spruce, larch, oak. Special wood types such as walnut are available for interior use.
- Interior view — Wood with individualized colour arrangements: Natural oils, thin or thick glazes
- Exterior view — Wood with individualized colour arrangements: Natural oils, thin or thick glazes
- Special functions — Sound, sun, and break-in protection
- $U_w$  value — up to  $0.65 \text{ W/m}^2\text{K}$
- $U_g$  value — up to  $0.5 \text{ W/m}^2\text{K}$
- Energy efficiency — Window system certified by the Passive House Institute PHI Darmstadt: A-components



Full frame insulation increases the thermal comfort and performance.

## OPTIWIN RESISTA

### THE ELEGANT WOOD-ALUMINIUM WINDOW

#### Robust beauty

The OPTIWIN RESISTA window system has impressively clear optics and outstanding durability. The frame's outer layer is made of aluminium and protects the wood window from the elements. It can be removed and replaced when needed. In interior spaces, wood windows provide a natural and warm atmosphere.

Its slender design, excellent heat insulation performance, and outstanding value make this window system very attractive. OPTIWIN RESISTA is also ideal for renovations.



Elegant design and individualized colours for interior and exterior.



In interior spaces, natural wood contributes to a comfortable atmosphere, and special varieties are available upon request.

## OPTIWIN RESISTA

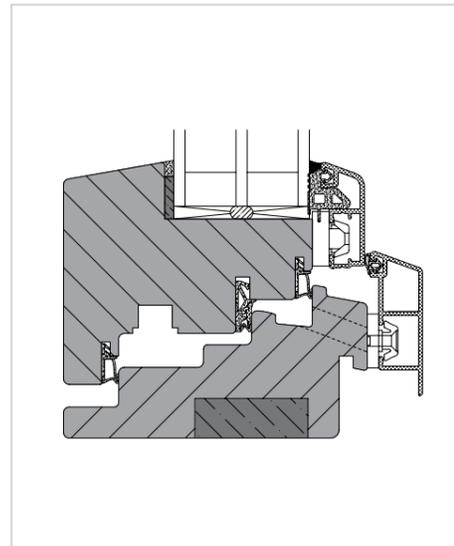
Another special benefit of the OPTIWIN RESISTA window system: The frame can be insulated up to the sash. But only the narrow sash wood is visible from the outside, contributing to the minimalist appearance. But this also optimizes heat insulation at the important connection to the building.

OPTIWIN RESISTA uses four seals and two drainage levels for the best possible protection against cold, driving rain, and noise. With a  $U_w$  value of up to  $0.65 \text{ W/m}^2\text{K}$ , OPTIWIN RESISTA is also certified as an A-component by the Passive House Institute of Darmstadt for fulfilment of the highest requirements.

The CLASSIC variant of OPTIWIN RESISTA has visible hinges, while the MODERN has hidden ones.



The frame and glass panes are adhered together. This results in better static properties and strong protection against wind and weather.



The aluminium window frame provides protection against the elements and permits replacement during renovations.

- Window types — Suitable for all window types
- Wood types — Fir, spruce, larch, oak. Special wood types such as walnut are available for interior use.
- Interior view — Wood with individualized colour arrangements: Natural oils, thin or thick glazes
- Exterior view — Exterior layer in aluminium with individualized surface and colour arrangements
- Special functions — Sound, sun, and break-in protection
- $U_w$  value — up to  $0.65 \text{ W/m}^2\text{K}$
- $U_g$  value — up to  $0.5 \text{ W/m}^2\text{K}$
- Energy efficiency — Window system certified by the Passive House Institute PHI Darmstadt: A-components



Full frame insulation increases the thermal comfort and performance.

## LIFTING/SLIDING DOOR TAKES YOU OUTSIDE

### Elegant opening to the outdoors

The OPTIWIN MOTURA lifting/sliding door reflects a timeless and elegant design with its narrow frame and large glass surfaces. The subdued design virtually disappears and provides nearly unlimited views, producing a direct connection between indoors and outdoors.

The natural wood of OPTIWIN MOTURA creates a warm and cosy atmosphere. As with all OPTIWIN windows systems, natural oils and thin or thick glazes are available for individualized interiors.

The MOTURA lifting/sliding door works with all other OPTIWIN systems: It has the same shadow gaps, is available in the same wood types and surfaces, and can be outfitted with matching furniture.



The lifting/sliding door is coordinated with all other OPTIWIN window and door systems for easy combinations.



Slender frame results in an elegant design.

## OPTIWIN MOTURA

The OPTIWIN wood construction fulfils the most stringent requirements for energy efficiency despite its slender design. OPTIWIN MOTURA achieves  $U_w$  values as high as  $0.62 \text{ W/m}^2\text{K}$ . This has earned the lifting/sliding door certification as an A-component from the Passive House Institute of Darmstadt.

The frame of OPTIWIN MOTURA can be insulated up to the sash. This underscores its minimalist appearance because only the narrow wood of the sash is visible from outside. But this also optimizes heat insulation at the important connection to the building.

The high-quality design and meticulous workmanship results in extremely high air- and water tightness, particularly in the sensitive area of the barrier-free threshold. OPTIWIN developed the threshold out of high-tolerance fibreglass and provided it with a second drainage level.

The glass panes of OPTIWIN MOTURA are adhered to the frame. This gives the lifting/sliding door extraordinary static stability and minimizes maintenance. In addition, the glazing protects the wood frame from all types of weather damage. The lifting/sliding door is very smooth moving, highly functional, and very easy to use, even in large formats.



An enormous range of grips and furniture are available for all OPTIWIN systems.

Easy combinations	Can be combined with all OPTIWIN window systems
Wood types	Fir, spruce, larch, oak. Special wood types such as walnut are available for interior use.
Interior view	Wood with individualized colour arrangements: Natural oils, thin or thick glazes
Exterior view	Full glass appearance
Special functions	Sound, sun, and break-in protection
$U_w$ value	up to $0.62 \text{ W/m}^2\text{K}$
$U_g$ value	up to $0.5 \text{ W/m}^2\text{K}$
Energy efficiency	Window system certified by the Passive House Institute PHI Darmstadt: A-components



Technical and aesthetic highlight: The lifting/sliding door has no threshold and is available with edge-to-edge glass corners.

## FOR THE RIGHT RECEPTION

### Protection and cosiness

The OPTIWIN ENTRADA series of front doors makes a good impression in any entrance. The unique design of the wood door and the ecological insulating materials work hand-in-hand. On the interior side of the door, they ensure a high surface temperature, while minimizing radiation losses on the exterior side. This prevents the unpleasant cold air draught, keeping the entranceway cosy and warm. The design of this front door, which is highly suitable for passive homes, can be individually selected, including in conjunction with choices of glazing, such as in the skylight area or lateral stationary elements.



Exterior as well as interior doors are available in a uniform design, suitable for all OPTIWIN window systems.

Its high insulation values follow tradition: One of the predecessor models was the first front door in the world to be certified for passive houses. OPTIWIN ENTRADA doors of today achieve a heat transfer coefficient of up to  $0.68 \text{ W/m}^2\text{K}$ .



The benefits of wood as a material become truly apparent when used in the robust OPTIWIN ENTRADA exterior door.

- Easy combinations — Can be combined with all OPTIWIN window systems
- Wood types — Available in all wood varieties that are suitable for house doors.
- Interior view — Wood with individualized colour arrangements: Natural oils, thin or thick glazes
- Exterior view — All exteriors are available. Colour combinations also with natural oils or thick or thin glazes
- Special functions — Sound, sun, and break-in protection  
Available in a panic door version
- $U_g$  value — up to  $0.68 \text{ W/m}^2\text{K}$
- Energy efficiency — Door system certified by the Passive House Institute PHI Darmstadt

### Construction

OPTIWIN ENTRADA consists of a 108 mm thick door leaf and a solid wood frame of  $95 \times 134 \text{ mm}$ . The door leaf has a double rabbet. A high quality fibreglass threshold developed by OPTIWIN creates the lower termination. A pressure-free second drainage level prevents leaks even during extreme driving rain.

The entrance door is available with an automatic triple locking mechanism and can be integrated into the latest alarm systems and building automation systems, such as keyless fingerprint access controls.

## FACADE

# ATTRACTIVE ENERGY EFFICIENCY

### Merging design and performance

The energy-efficient facade system enables modern architectural design using the atmospheric properties of natural wood, while simultaneously fulfilling the most stringent requirements for heat insulation. The visually attractive wood and glass design is certified as a component for passive houses.

The facade is mounted on a post-and-mullion structure. The spacers to the outer layer are thermally separated and consist of wood and wood fibre insulation. The weight of the panes is supported by statically calculated glass brackets.



Elegant design with slender frame underscores the design.

Like the OPTIWIN window systems, the facade system is comprised of a weight-bearing wood structure that can be fitted externally with weather-resistant wood types or with a robust aluminium frame. This outer layer can be exchanged and is individually configurable, a benefit also during subsequent renovations.

- Wood types — Fir, spruce, larch, oak. Special wood types such as walnut are available for interior use.
- Interior view — Wood with individualized colour arrangements: Natural oils, thin or thick glazes
- Exterior view — Wood with individualized colour arrangements: Natural oils, thin or thick glazes  
Aluminium: in all common surfaces
- Special functions — Sound, sun, and break-in protection



The facade solutions provide the benefits of a high level of pre-fabrication and short assembly times.

## SYSTEMATIC EDGE-TO-EDGE GLASS CORNERS

### Highlight with high insulation performance

Filigree edge-to-edge glass corners are an attention-getter for any windowfront or facade. They provide elegant transparency; seamless transitions from interior to exterior spaces. OPTIWIN plans and executes edge-to-edge glass corners according to individual requirements. Three different technical solutions, for each of the three window systems, are available for edge-to-edge glass corners. Each is optimized for the highest possible heat insulation and fulfils all static and thermal requirements for passive houses.

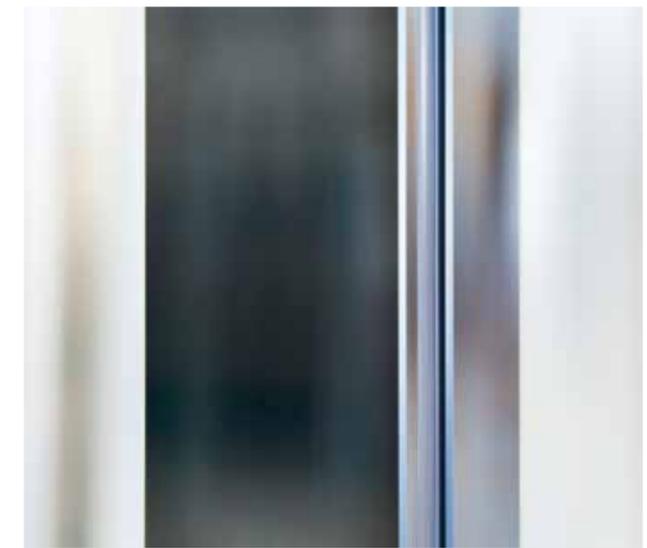
Calculations of surface temperatures or condensation can be prepared when needed.



Edge-to-edge glass corners are attractive eye catchers.



Extremely filigree: Edge-to-edge glass corners with aluminum brackets for interior and exterior use.



The purest form of edge-to-edge glass corners: made of stepped panes with black coating.

# SPECIAL

FUNCTIONS



## SAFETY DOWN TO THE LAST DETAIL

### Break-in protection

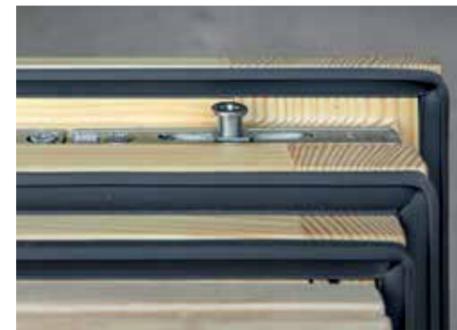
For windows or doors: With OPTIWIN you're on the safe side. All products come with lever-proof locks. But windows and doors can also be adapted to specific needs for higher break-in protection, including special glazing. Closure and opening monitoring for integration into alarm systems is also available.

### Sun and insect protection

Whether you need folding shutters, roller blinds, Venetian blinds, or external textile screens: OPTIWIN products can be equipped with whatever sun and/or insect protection you prefer, for a solution that brings functionality and aesthetics into harmony. Tell us what you need.

### Noise protection

Due to their special design and triple glazing, OPTIWIN windows deliver excellent soundproofing – and outstanding heat insulation at the same time – as standard. For extremely high requirements, glazing of up to 60 mm in thickness can be installed, giving OPTIWIN windows soundproofing of up to 45 db.



All OPTIWIN window systems are provided with lever-proof locks with robust mushroom pegs.



OPTIWIN window systems can be combined with all common sun protection solutions.

# HIGH

TECH



## CUTTING-EDGE TECHNOLOGY AND A LOVE OF CRAFTSMANSHIP

### Rooted in tradition ...

Comprehensive knowledge of materials and a systematic understanding of building shells and their openings are the foundation of our craftsmanship. This gives OPTIWIN products reliably high quality, functionality, and value retention. Our many years of experience allows us to realize our customers' unique expectations and desires – high customizing, not high volume.

### ... but ready for the future

We develop our products according to the latest technological standards – and beyond. As we search for the best solutions for efficiency, design, and quality, we are continually communicating with experts in research and practical applications. By using cutting-edge production machinery, we ensure our ability to manufacture highly complex profiles with consistently high precision.

OPTIWIN combines the competence and individuality of a craftsman with the refined art of engineer. The results are exceptional products with a high comfort factor and the best quality.



Computer-controlled machining centres deliver the highest possible precision.



Wood – a traditional material for buildings of the future.

# CRAFTS

MANSHIP + NETWORKING

## AN INTERNATIONALLY STRONG NETWORK

### Think global, act local

OPTIWIN is an international network of medium-sized window manufacturers and timber home builders. The partners develop, manufacture and market energy-efficient and visually appealing windows, doors, and facades.

OPTIWIN combines the competence and individuality of a craftsman with the refined art of engineering. All window, door, and facade systems are internationally certified, follow a classical design, and can be configured according to individual customer desires. The prestigious Passivhaus Component Award, which the OPTIWIN window systems earned in 2014 and 2015, is proof of their high quality.

Product development benefits from extensive experience in the network: Each partner contributes what it can do the best: extensive experience with urban renovations, a certain type of production know-how, or a deep understanding of window design on the coasts, i.e. in humid, salty environments. A professionally structured development process results in optimized bundling of the capabilities of individual companies.

The customer benefits twice: from a broad network and from regional proximity of individual companies and their intimacy with building culture.



Joseph Freisinger, initiator of OPTIWIN and managing director of Freisinger Fensterbau GmbH

Photos Anne Faden: pg. 5, pg. 13, pg. 15 (center), pg. 18 (left), pg. 19 (right), pg. 23 (bottom), pg. 27 (bottom), pg. 30/31 (all images), pg. 37 (bottom right), pg. 38, pg. 39 (bottom left), pg. 40/41 (all images), pg. 42/43 (all images) / Photos Optiwin: Title page, pg. 2/3, pg. 6/7, pg. 8/9, pg. 14 (left), pg. 16/17, pg. 18/19 (and the drawing), pg. 20/21, pg. 21 (below), drawing pg. 22, pg. 24/25, pg. 25 (below), pg. 26 (below left and drawing), pg. 28/29 (all images), pg. 37 (below left) / Photos Conne van d'Grachten: pg. 10/11, pg. 12, pg. 14 (right), pg. 20 (below), pg. 22 (below links), pg. 22/23, pg. 24 (below), pg. 26/27, pg. 32/33 (all images), pg. 36/37, pg. 36 (below), pg. 39 (below center) / Getty Images / David Lees pg.4 / Passiv House Institute: pg. 15 (left) / Markus Kaiser: pg. 34/35 (all images) / Dennis Kuhn: pg. 14 centre



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