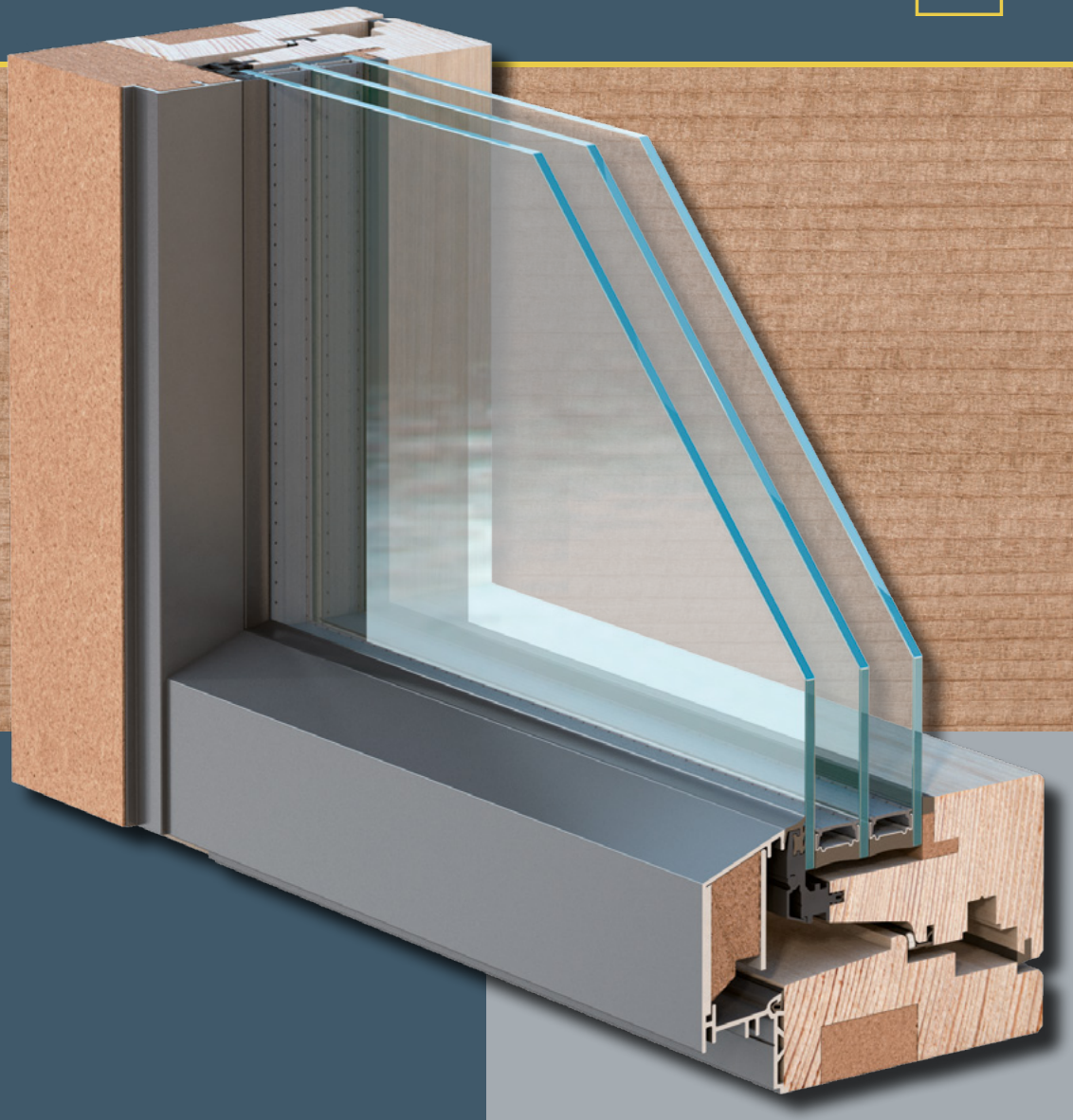
smartwin



less energy saves more

smartwin: Innovation for Passive House Windows

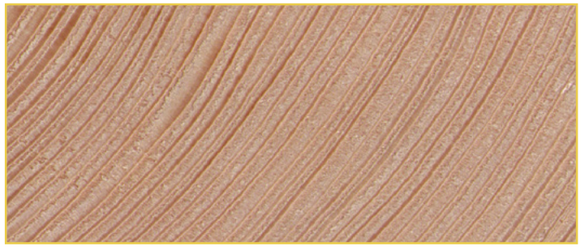
smartwin is a window, which has been designed as a first class passive house window at an affordable price. The aim was to combine an intelligent network (smart), attractive design (art) and energy saving window (win) into one unit. smartwin saves money from first day fitted in a cosy home. The founder of pro Passivhausfenster developed several versions to make your visions a reality (smartwin, smartwin sliding and smartwin historic).

All versions reach strict criteria for use in passive houses. Certificates issues by Prof. Dr. Wolfgang Feist of the Passivhaus Institute in Darmstadt confirm this. To get smartwin-windows in your house, a network of cooperating companies from different European countries was established. A strong team was born and is now able to collaborate and share their common knowledge. The materials used for smartwin windows provide not only excellent insulating properties but also have high aesthetic and practical qualities. Last but not least, these materials are considerate of our environment.

smartwin: less energy saves more!
smartwin: back to natural materials!

smartwin.us

smartwin



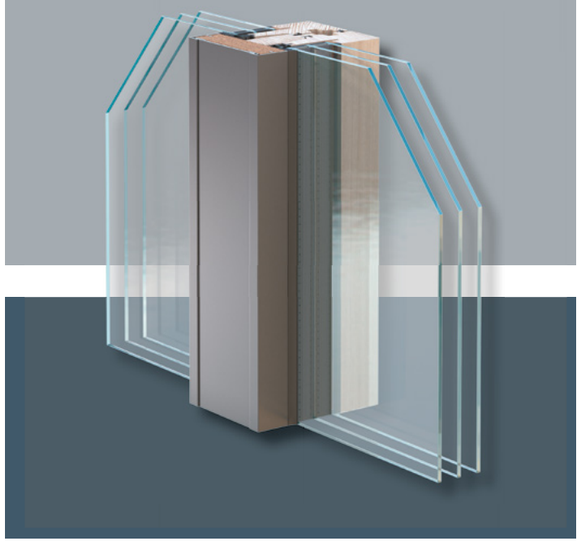
smartwin offers the best protection against the weather. Using high-quality wood from Central Europe, protected externally by solid aluminium giving your windows a long life without any need for maintenance. Using innovative components in the smartwin frames and high-performance insulating triple-glazing these windows perform two or three times better than the current standard, which is available on the market. smartwin is a result of precise German engineering. The optimal use of wood, aluminium, glass and insulation materials result in a high-quality product, which can be used in any building. From the energy point of view, smartwin thanks to its optimised design, brings a lot to you, and this is proved by PHI certification. You can rely on the declared properties. It is an optimum product designed to comply with tighter building energy regulations from 2014 to 2020.

Construction of passive houses is expanding constantly and each year the number built increases. In Europe, there are now more than one million squaremeter passive houses built proving that this type of energy performance is possible.

Building properties such as design, orientation, thickness of insulation, high airtightness, results in only to a fractional energy demand compared with standard construction. It delivers lower running costs, affordable mortgage repayments and all this with high living comfort. smartwin makes this construction easier. Last but not least, smartwin has brought an aesthetic breakthrough to passive house window frames. All the models of smartwin windows have an elegant and attractive look.

smartwin-properties:

- elegant and slim frame with good insulation
- weather resistant outdoors (alu), comfortable indoors (wood)
- attractive details: invisible frame from external facade
- minimal frame width, maximal glass surface
- high surface temperatures, there doesn't need to be any heating under the windows
- ppening sash with no visible hinging hardware
- affordably priced by simplified production method
- complete service – manufacture, delivery and installation

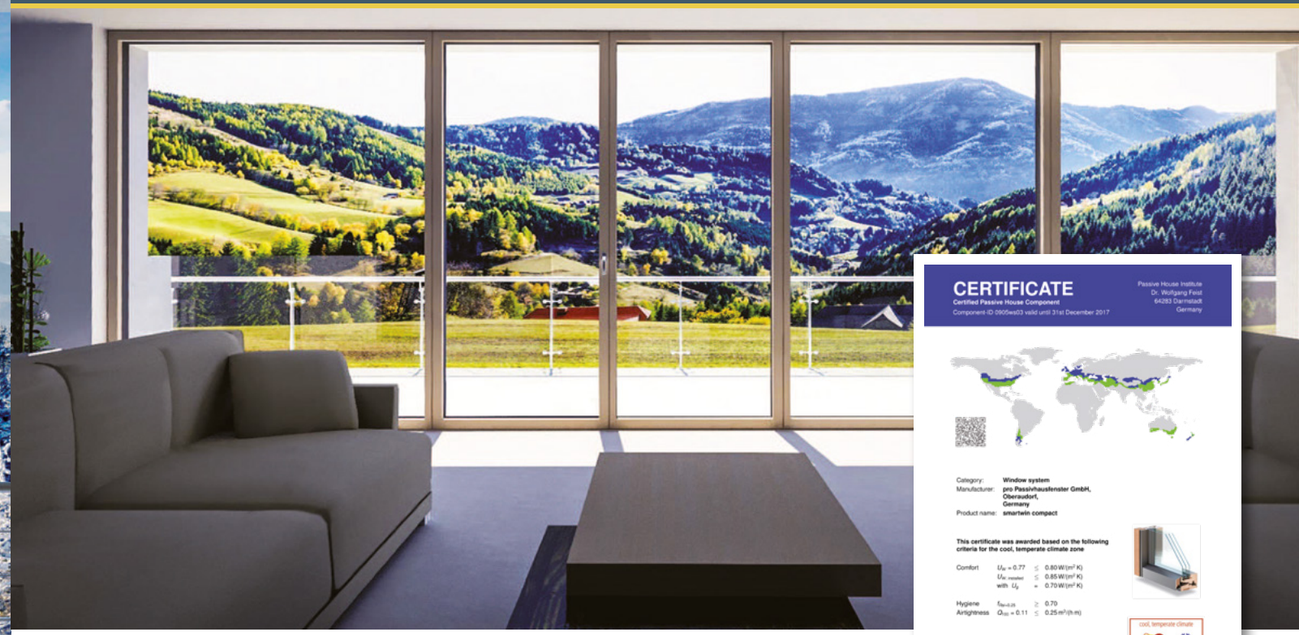


Housing

Would you like to feel comfortable behind your windows despite freezing outside temperatures? smartwin allows you to do this. Perfect seperation from outdoor cold and indoor warmth. Reduction in energy consumption and maximum thermal comfort!

You can relax as rising energy costs will affect you only minimally. High-quality passive and plus energy houses can allow this. No need for radiators under your windows, so that you can use the space under the window in a more useful way.

smartwin



smartwin compact

smartwin compact is a further development of the well-known smartwin with even more elegant design and increased energy efficiency.

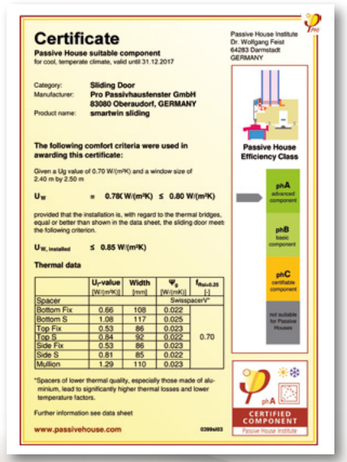
This further improvement results in a thinner frame design, which allows for an even bigger pane and thus leads to bigger solar gains.

Window frame and sash have a view width of only 70 mm at the side and at the top. Below, the new 86 mm window also creates a new class of elegance, brightness, and efficiency.

Inside cosy and natural wood, outside only glass and durable, maintenance-free aluminum profiles.

With the smartwin compact, pro Passivhausfenster continues to consistently pursue the path of economic optimisation of the most energy-efficient windows.

It is therefore not surprising that smartwin compact 2014 was awarded the first prize in the area of wood-aluminum windows by the Passive House Institute.



Certificate

Passive House suitable component

for cool, temperate climate, valid until 31.12.2017

Passive House Institute
Dr. Wolfgang Feist
64283 Darmstadt
GERMANY

Category: Sliding Door
Manufacturer: Pro Passivhausfenster GmbH
83080 Oberaudorf, GERMANY
Product name: smartwin sliding

The following comfort criteria were used in awarding this certificate:

Given a U_g value of 0.70 W/(m²K) and a window size of 2.40 m by 2.50 m

U_w = 0.78(W/(m²K) ≤ 0.80 W/(m²K)

provided that the installation is, with regard to the thermal bridges, equal or better than shown in the data sheet, the sliding-door meets the following criterion.

$U_{w,\,installed}$ ≤ 0.85 W/(m²K)

Thermal data

	U_f-value [W/(m²K)]	Width [mm]	Ψ_g [W/(mK)]	$f_{Rsi=0.25}$ [-]
Spacer			Swisspacer V*	
Bottom Fix	0.66	108	0.022	
Bottom S	1.08	117	0.025	
Top Fix	0.53	86	0.023	
Top S	0.84	92	0.022	0.70
Side Fix	0.53	86	0.023	
Side S	0.81	85	0.022	
Mullion	1.29	110	0.023	

*Spacers of lower thermal quality, especially those made of aluminium, lead to significantly higher thermal losses and lower temperature factors.

Further information see data sheet

www.passivehouse.com

0399ad03

Passive House Efficiency Class

phA advanced component

phB basic component

phC certifiable component

not suitable for Passive Houses

phA

CERTIFIED COMPONENT

Passive House Institute

smartwin sliding

Passive house in connection with a sliding door was for a long time a no-go. All sliding doors before smartwin sliding failed to meet the high requirements of the passive house in terms of the insulation quality of the frame and air tightness. Who wants a sliding door with uncomfortable drafts?

With the sliding door smartwin sliding, pro Passivhausfenster has succeeded in introducing the first passive sliding door to the market. A complete circumferential gasket ensures comfort in your home.

Visually, the sliding door exactly matches the proportions of the smartwin-window. smartwin sliding achieved the certification in energy efficiency class phA by the Passive House Institute

smartwin

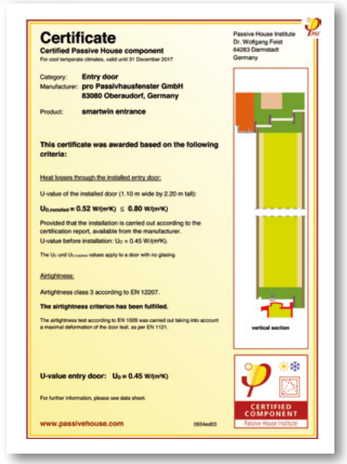
smartwin entrance

Entrance doors compatible with the passive house requirements were a challenge in the early years of passive house construction. Today, fortunately for the end user, there are a number of certified products.

Why smartwin entrance? The high aesthetic requirements that smartwin-partners place on their products did not stop at the doorstep.

The result is the well-known smartwin aesthetics, coupled with previously unattained functional values. An U_d-value of the built-in door of 0.52 W/m²K (with required 0.85 W/m²K) and an inner surface temperature at the coldest point of the doorstep threshold of more than 12.6 °C saves money and increase the cosyness for customers.

The attractive appearance of smartwin entrance is also not compromised by the safety, the operation via fingerprint, the homely wooden surface inside and the maintenance-free aluminum surface on the outside.



Certificate

Certified Passive House component

For cool temperate climates, valid until 31 December 2017

Passive House Institute
Dr. Wolfgang Feist
64283 Darmstadt
Germany

Category: Entry door
Manufacturer: pro Passivhausfenster GmbH
83080 Oberaudorf, Germany
Product: smartwin entrance

This certificate was awarded based on the following criteria:

Heat losses through the installed entry door:

U-value of the installed door (1.10 m wide by 2.20 m tall):

$U_{D,installed}$ = 0.52 W/(m²K) ≤ 0.80 W/(m²K)

Provided that the installation is carried out according to the certification report, available from the manufacturer.
U-value before installation: U_D = 0.45 W/(m²K).

The U_D und $U_{D,installed}$ values apply to a door with no glazing.

Airtightness:

Airtightness class 3 according to EN 12207.

The airtightness criterion has been fulfilled.

The airtightness test according to EN 1026 was carried out taking into account a maximal deformation of the door leaf, as per EN 1121.

U-value entry door: U_D = 0.45 W/(m²K)

For further information, please see data sheet.

www.passivehouse.com

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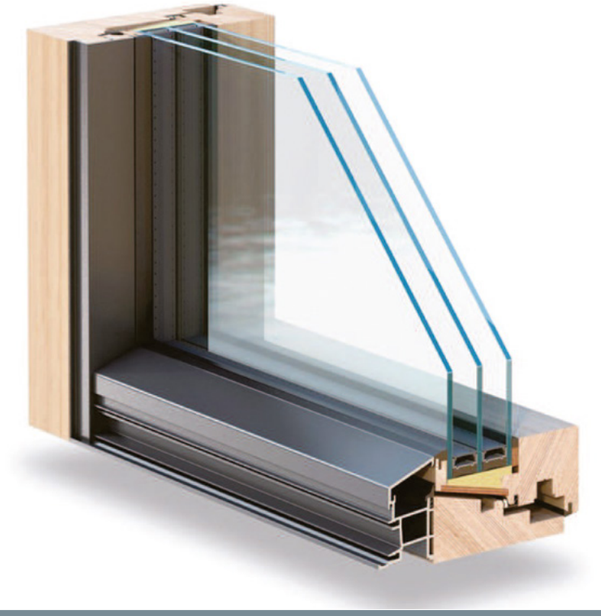
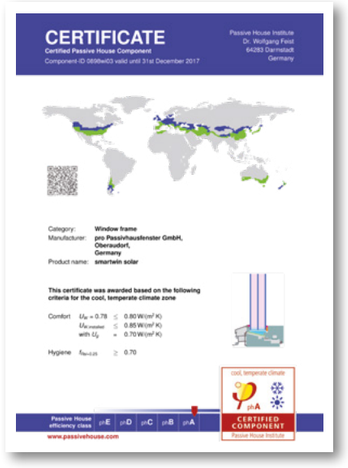
vertical section

CERTIFIED COMPONENT

Passive House Institute





smartwin solar

smartwin solar is the latest generation of the smartwin-family.

How can you further improve smartwin compact and give the end customer even more efficiency and increased comfort?

With a complete new approach with regard to the functional levels of the window, the two window innovators Franz Freundorfer and Sepp Lorber from pro Passivhausfenster have succeeded in providing for the first time a window which no longer needs a structural-bearing layer in the glass plane. This is achieved by transferring the load through fiber-reinforced corner pieces, which at the same time connect the individual wood parts of the window sash into a fixed unit.

smartwin solar with a 58 mm narrow window sash will also delight you and at the same time bring even more solar energy into your home. Like all predecessors of smartwin solar, wood is being used again in the interior as well as aluminum, stainless steel and glass in the outdoor area.

smartwin

Properties of all smartwin-windows:

Frames:

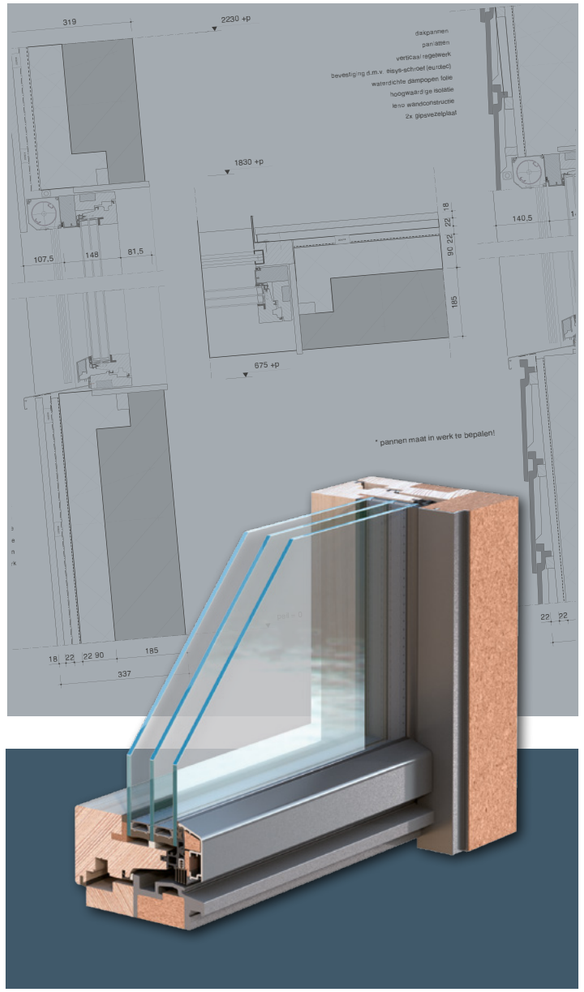
- frames of high-quality wood in a slim profile
- surface treatment maintains the attractive wood finish
- slim front width of frame (sides, bottom and top)
- extra slim front width of post and transom
- identical sightlines of frame and sash
- low profile composite threshold on the frames of opening and sliding doors

Outdoor covering:

Weather resistant aluminium profile in RAL colours or anodized

Glazing:

- insulated triple-glazing with option of customisation for particular buildings
- in standard U_g = 0,54 W/m²K, g = 50%
- glass with higher permeability of solar energy U_g = 0,63 W/m²K, g = 62%
- space between glass filled with argon
- spacer could be Swisspacer Ultimate
- maximum height balcony door up to 2850 mm
- maximum width single opening window up to 1450 mm
- maximum height of sliding door up to 2800 mm
- maximum width sliding door up to 3300 mm
- CE label, certificate from PHI Darmstadt



Contribution

Nowadays with modern architectural designs we understand your desire for big glazed elements with clean lines. If a pleasant feeling from materials such as wood, glass and aluminium is also desired then smartwin is the right choice for you.

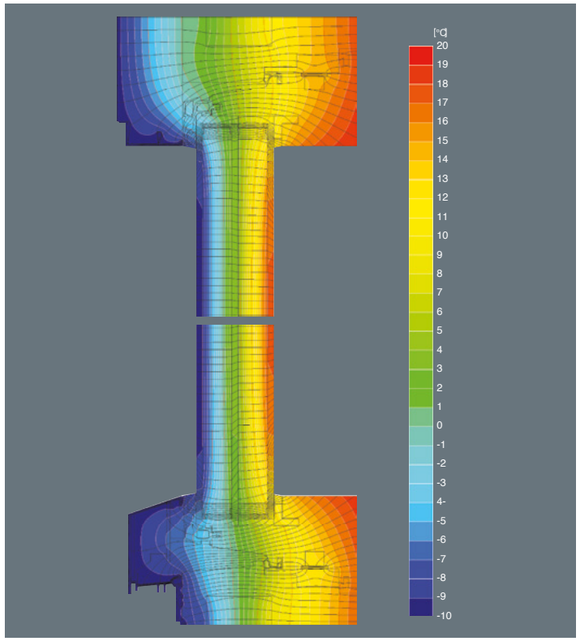
smartwin includes sensible design, contemporary aluminium and the sensational warmth of wood. Another advantage of smartwin is the reduced need for heating in winter and cooling in summer. This allows you to reduce your future expenses not only on energy but also on maintenance.

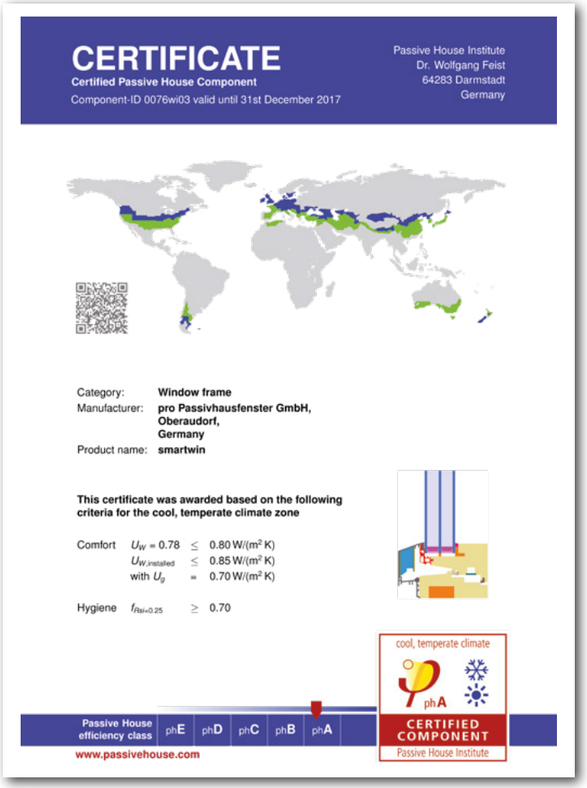
smartwin

The smartwin-windows with their properties were classed into the highest rating and energy efficiency class phA and even phA+.

What is your benefit?

If your aim is to build an energy saving house, then smartwin-windows can help you. You may need less insulation or possibly you can now afford to build a passive house or plus energy house even in a place where with other windows it was not possible. It is up to you how you take advantage of these extraordinary qualities.

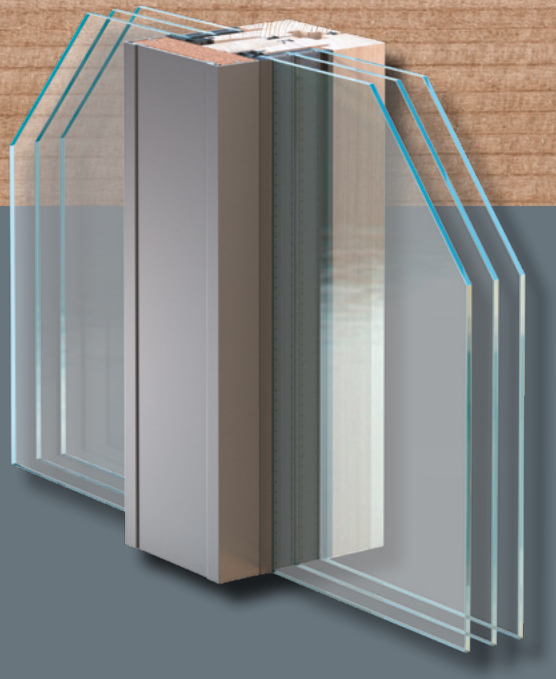




smartwin U_w-values:

	U_f (W/m²K)	with glazing (W/m²K) U_g = 0,54	U_g = 0,60	U_g = 0,70
smartwin	0,75	0,66	0,70	0,78
smartwin fix	0,57	0,61	0,66	0,74

smartwin



pro Passivhausfenster

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