



Energy efficient window & doors with aluplast-technology


# uPVC WINDOWS

YOUR PERFECT CHOICE









Come with us on a  
journey through the  
**world of uPVC windows**  
and discover their  
shapes, colours, quality  
and energy efficiency.

## Table of Contents

Interesting facts	4
How is the uPVC window constructed?	5
Window types and colours	6
Product range	7
smart-slide   new generation of sliding doors	8
Hardware   essential background	12
Glazing   a visible part of the window	13
Noise reduction	14
Sound insulation	15
Energy efficiency	16
Tropical compound	17
BAL40 Windows	18
Unique Properties	19



# Interesting facts about uPVC windows

uPVC is the best and most suitable window material and its importance is constantly growing all over the world. It is not only used for construction, but also for everyday commodities such as clothes, car parts, drink bottles and medical applications.

The unparalleled material uPVC offers a whole range of outstanding product properties to create a window that remains unbeaten by any other raw material. Purchase costs of uPVC windows are far more economical than a comparable product made of wood or aluminium. There are great many of aspects that play a significant role when choosing new windows. For this reason, we would like to present you some interesting facts about uPVC windows that will help you with your decision making:

## 1. ENERGY EFFICIENCY OF UPVC WINDOWS

- use of lead-free uPVC raw material
- easy to recycle
- energy saving (in both production and thermal insulation)

## 2. QUALITY OF UPVC WINDOWS

- uPVC is completely harmless to humans
- excellent sound insulation, especially in the growing urban regions
- perfect thermal insulation
- durability and resistance (fire resistance, UV stability, wind resistance)
- the value of your home can be increased by integration of aluplast windows and doors
- very durable (uPVC windows have a life cycle of 30 years or more)

## 3. PERFORMANCE CHARACTERISTICS OF UPVC WINDOWS

- resistant to dirt and environmental conditions
- can be easily cleaned by using a mild detergent or simply soapy water
- resistant against termites and will never rot, rust or corrode
- cannot be deformed by moisture and temperature differences
- prevent development of mould and bacteria
- efficient for many years (without constant effort of conservation by painting or special maintenance measures)
- excellent burglary resistance

## 4. VARIETY OF DESIGNS

- appealing visual appearance with various types
- different shapes, e. g. semi-circular windows
- available in countless colour variations, laminated outside or on both sides
- suited for both new buildings and renovation of old buildings
- customised for individual requirements

### PLEASE NOTE

Windows are no minor matter: They let light into our homes and illuminate our lives. They create the positive feeling of home.



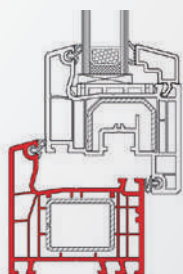
Inside view  
of a uPVC  
window



IDEAL 4000®  
3-dimensional  
section of a  
uPVC window

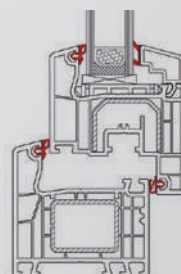
## How is the uPVC window constructed?

The detailed section of single components of a uPVC window



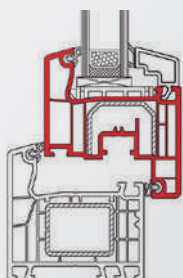
### WINDOW FRAME

holds the window sash and serves to fasten the window to the building structure.



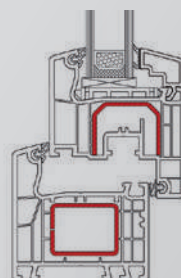
### GASKETS

co-extruded gaskets ensure improved heat and sound insulation.



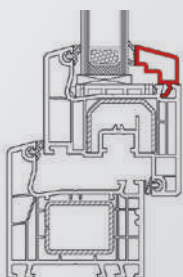
### WINDOW SASH

is the movable element which allows you to open and close the window.



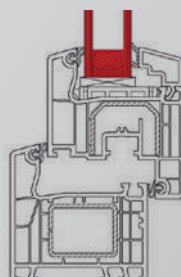
### STEEL REINFORCEMENTS

are integrated into the window frame and sash to ensure maximum load bearing capacity.



### GLAZING BEADS

are inserted into the window sash and serve to fix the glass pane.



### GLAZING

protects you from external influences while still allowing the view to outside.

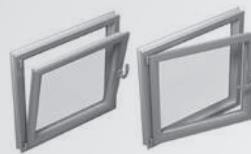
# Window types there is something for every taste

Window and door types are distinguished by their way of installation and opening.



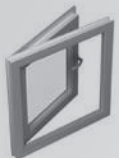
## **FIXED GLAZING**

The glazing is inserted directly into the frame – there is no sash that could be opened.



## **TILT-AND-TURN FUNCTION**

The window can be opened to the inside like a casement and it can be tilted.



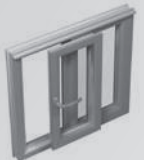
## **CASEMENT – OUTWARD OPENING**

The sash is to be opened outwards.



## **AWNING – OPENING OUTWARD**

The window can be opened to the inside and it can be tilted.



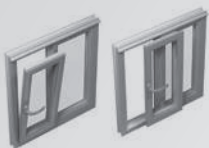
## **MULTI-SLIDE**

The sash can be slid to the side to open the window. Multiple sashes can be used to stack



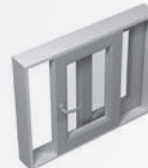
## **SMART-SLIDE**

The sash is shifted off the gasket horizontally and slides, providing superior tightness against weather and noise. Multiple sashes can be used to stack



## **TILT-AND-SLIDE**

The sash can be tilted and slid to one side to open the window.



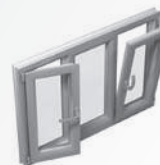
## **LIFT-SLIDE**

The sash is lifted vertically off the gasket and can slide the largest panels with ease. .



## **SLIDE AND FOLD**

The sashes can be folded, each running along a runner rail.



Many combinations available.



## **uPVC WINDOWS ARE NOT NECESSARILY WHITE**

Colour your life and choose your favourite. The aluplast use a special manufacturing technique to apply the décor lamination foil on the uPVC window profiles. This technique guarantees an even structure, a uniform colour, and maximum weather resistance while meeting the highest requirements regarding climatic influences.

# Product range, full of possibilities

Windows are a long-lasting investment. For this reason you should select a product suitable for your requirements.



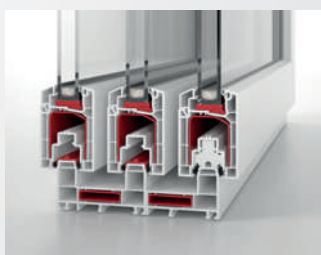
## **IDEAL 2000®**

IDEAL 2000® is the most substantial 3 to 4-chamber window system with two levels of sealing and a 60 mm construction depth. The window offers the best possible price-performance ratio and a perfect economic efficiency. It is the right window solution for fixed, tilt-and-turn and casement openings. Many possible variations allow for the use of the system in the domain of commercial buildings as well as private homes.



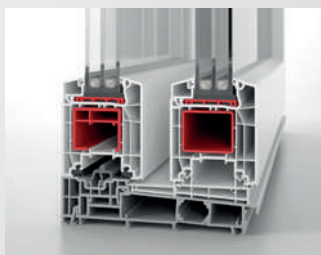
## **IDEAL 4000®**

With 5 chambers as a standard combination, sound insulation up to 45 dB and a construction depth of 70 mm, the IDEAL 4000® windows offer excellent thermal insulation properties – delivering a range of windows today, which satisfy the standards of tomorrow. It is the best suitable window for large doors for balconies and terraces.



## **SLIDING SYSTEMS**

The aluplast sliding window series with its slender design will meet your individual requirements. From economical window solutions to huge balcony doors, many options are possible.



## **LIFT-SLIDE**

With its smooth-running lifting mechanism, even huge sliding elements – with a width up to 3m, a construction depth of 85mm and with large reinforcements for the highest degree of stability – can be moved very easily. The wide opening provides a harmonious transition from living to outdoor areas without disturbing steps while maintaining best sealing values.

# LEAVES NOTHING TO BE DESIRED

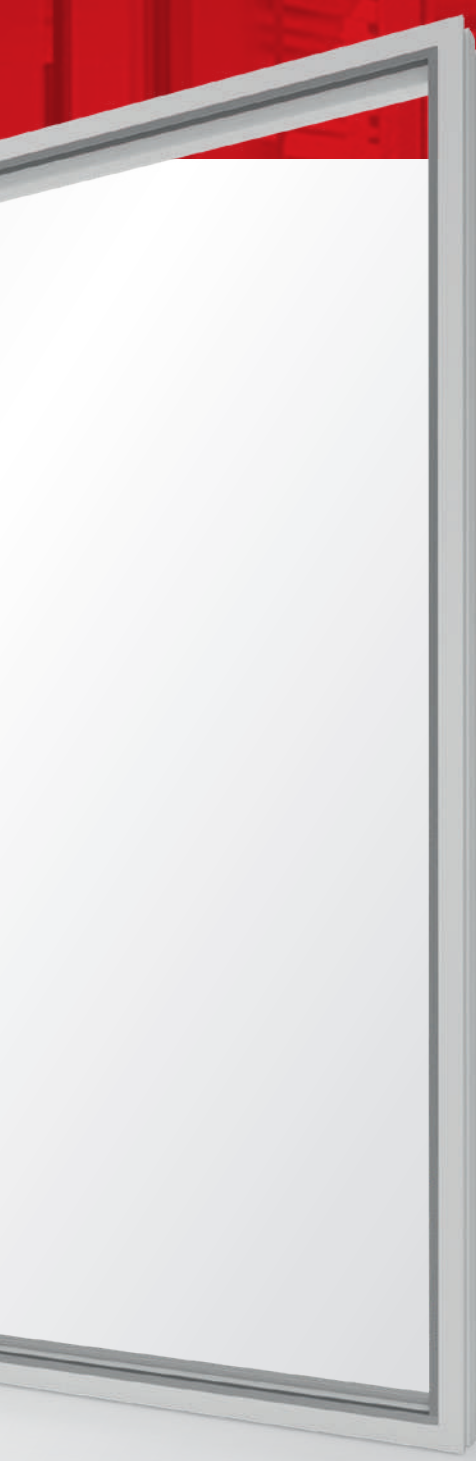
Get into the new generation of sliding doors with smart-slide.

## smart-slide

- simple to operate
- recessed threshold solution
- WERS  $U_w$  rating as low as 1.1 W/m<sup>2</sup>K
- glazing and panel thickness up to 41 mm possible double and triple glazed)
- modern classic-line design
- concealed hardware technology
- scheme A (single door) and scheme C (bi-parting doors)
- available in numerous decor designs
- optional bonding inside (adhesive technology)
- Profile depth of 140 mm







### **GREAT STABILITY = LESS MAINTENANCE**

Why compromise? The new smart-slide door makes use of very stable hardware resulting from outstanding innovation. The sophisticated mechanism of the new aluplast sliding door simplifies the hardware technology used, resulting in superior sliding performance for years to come.



### **OUTSTANDING SEALING**

smart-slide scores highly for sealing owing to the innovative locking mechanism and the high-quality sealing surfaces with no brushes. Additional locking points offer outstanding sealing and even more security. The interplay between the various technical features ensures the smart-slide achieves extremely good sealing performance against air, wind, sound and driving rain.



### **LET'S GET TO THE POINT!**

This new generation slider brings a new standard and economy to premium sliding doors. With acoustic performance, airtightness, ease of use, low threshold possibilities and thermal performance exceeding all else at this price point, this slider is the superior choice for your project.

# The all-round star

Good news. smart-slide windows and doors have top values for heat insulation, statics and sealing. Not only that, but it is impressively easy to operate



# IMPROVED CONVENIENCE THROUGH EASE OF OPERATION

Large glass surfaces are very much in vogue. This includes generously dimensioned sliding doors, which open up to bring the outdoors into the living space. This won't be a problem for you, as smart-slide can be manufactured in very large dimensions. You will love the locking mechanism, with the sash sliding effortlessly and sealing tightly with a simple operation of the handle. This makes smart-slide windows and doors so simple to use that it is virtually impossible to operate incorrectly.



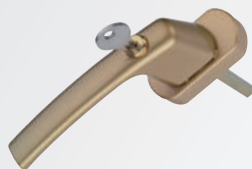
# Hardware – essential background

Hardware has a wide range of functions. It connects the window frame with the sash and allows operation of windows and doors. For this reason, we would like to present some interesting facts about the Hardware in uPVC windows that will help you with your decision making



## **SASH LIFTER**

Tilt-and-turn hardware lifts the sash into the correct position with minimal effort and guarantees a long service life.



## **LOCKABLE HANDLE**

When it comes to security multiple options are available. This includes a lockable handle which can increase the window or door security by restricting operation as required.



## **TURNING HANDLE**

The essential operating control of a window fitting is the turning handle. A simple turn of the handle can open, close, tilt or fold the window or door.



## **MULTIPOINT LOCKING**

Increased security thanks to a multipoint locking system. The system guarantees basic security.

Based on the great variety of windows, there are hardware systems for all window types. The hardware is a significant component of the window, especially for handling and security. The hardware for the most common European tilt and turn systems offers the best safety, security and comfort for your home. However, good hardware for casement and sliding systems is also available.

## **PLEASE NOTE**

We will be happy to show you further detailed information on hardware.



# Glazing – a visible part of the window

The importance of window glass has also been integrated in your window choice. Many solutions are available:



## PLEASE NOTE

The solar heat gain coefficient should be as low as possible while the light admission should be as high as possible. We will be pleased to help you.

### DOUBLE GLAZING

Double or even triple glazed units are separated by an air or other gas space like Argon, to reduce heat transfer and / or sound transmittance across a part of the building envelope. In modern insulated glass units, the space between the glass panes is kept dry by the use of desiccant and the edges are sealed to eliminate possible condensation and provide superior insulating properties.

### REPLACE TINTED GLASS WITH LOW E GLASS

Low Emissivity ("Low-E") glass has a special invisible coating bonded to the glass inside the double glazing unit. This coating reduces heat loss from the home, by essentially acting like a "heat mirror" that reflects heat back into your home. Low E can also reduce solar heat gain that can overheat your house, while also insulating your house from the temperature outside. Low-E glass greatly enhances the insulating performance by as much as an additional 60% compared to standard double glazing.

### TEMPERED GLASS – CHANGE TO TOUGHENED GLASS

A type of safety glass processed by controlled thermal or chemical treatments to increase its strength compared with normal glass. Fully toughened glass is approximately 4 to 5 times stronger than heat treated glass of the same thickness when exposed to uniform static pressure loads.

### LAMINATED GLASS

Two or more panes of glass permanently bonded together with one or more interlayer. Laminated glass offers good acoustic insulation and a high protection factor against burglary.

### LIGHT ADMISSION – CHANGE TO VISIBLE LIGHT TRANSMISSION

VLT is the percentage of visible light passing through the glass. The higher the VLT, the more light is transmitted.

### SOLAR HEAT GAIN COEFFICIENT

The Solar Heat Gain Coefficient, SHGC, measures how well a window blocks heat from the sun. Therefore, the lower the SHGC, the lower the amount of heat gain. SHGC ratings are shown as a number between 0 and 1. The lower the number, the better the window is at blocking solar heat.

# Noise reduction – feel the silence & the comfort

Open Window ~ 80 dB  
(heavy traffic)

Old Window ~ 60 dB  
(single glazed)

Standard Window ~ 48 dB  
(double glazed)

uPVC Window ~ 35 dB  
(IDEAL 4000 and  
IDEAL 2000  
noise reduction)

## INFLUENCING FACTORS

1. Frame
2. Glazing
3. Glass Packers
4. Installation

## PLEASE NOTE

Reduction of 10 dB (decibel)  
will reduce noise by 50 %

## NOISE PROTECTION

Being exposed to permanent, or even only to a short-term but intensive, noise, can lead to a harmful impact on human health. Thus, noise protection is an imperative. We can provide you with the best possible protection against unwanted negative noise effects.



# Sound insulation – for a better quality of life

dB (decibel) is commonly used in acoustics to quantify sound levels perceived by the human ear.

Noise has an immense impact on our quality of life. The results are sleep loss and continuous stress that can cause permanent damage to

our health. uPVC windows are an effective protection from noise and create a permanently pleasant atmosphere.



# Energy efficiency – living comfort and environmental protection

Innovative high-quality uPVC windows cut energy losses to a minimum. With uPVC windows you can contribute to the conservation of increasingly scarce resources and to the reduction of pollutant emissions. Combine environmental protection and living comfort by insulating with uPVC windows.

The U-value determines the heat transfer coefficient of the material. The w in this term stands for the entire window.

The calculation of this is based on the U-values and the size of each single material of all components. This means the glass, the frame material as well as the psi-value, which describes the heat flow generated through the insulated glass edge with the distance piece.

## U-VALUE ( $U_w$ )

= U-value glazing ( $U_g$ ) \* Area glazing ( $A_g$ )  
+ U-value frame ( $U_f$ ) \* Area frame ( $A_f$ )  
+ Psi-value ( $\Psi$ ) \* length of the edge bond (l)  
/ Area glazing ( $A_g$ ) + Area frame ( $A_f$ )

$$U_w = \frac{U_g \cdot A_g + U_f \cdot A_f + \Psi (PSI) \cdot l}{A_g + A_f}$$



## PLEASE NOTE

The lower the U-value, the better!





## Tropical compound – for regions with high UV radiation

aluplast can look back on more than 20 years of experience in providing tropical uPVC formulations to regions with very high levels of UV radiation.

In order to make sure that uPVC windows remain stable and robust even under harsh environmental conditions, aluplast developed a special uPVC compound called Tropical Mix. This “tropical” formulation and the profiles have been tested and certified by AAMA (American Architectural Manufacturers Association).

AAMA tests the profiles at accredited laboratories under natural weathering conditions. The profiles are tested in three different weathering stations in Ohio, Florida and Arizona for two years where they have to prove their stability against UV light, wind load and humidity.

In artificial and natural weathering tests, aluplast proved the profiles’ outstanding durability, weather resistance, and quality, and was finally awarded with the AAMA

certification. All tests, for example the Charpy impact test, were passed with ease and without any restrictions, even after two years of weathering.

Environmentally friendly calcium-zinc (CaZn) stabilizers ensure that you will enjoy your eco-friendly, high-quality windows and doors for many years to come. aluplast has excellent verified references in the Middle East, Asia, Africa and Australia regarding the successful use of our tropical formulation.

Today we are proud to say that we can supply customers worldwide with an extended tropical profile portfolio and that we are able to react flexibly to the different market requirements. Stay ahead of the times with innovative technologies developed by aluplast.



# Australia's Premium Range of **BAL40** Bushfire Rated Windows and Doors



Many Australian homes are located in areas prone to bush-fire attack. Changes to the BCA in 2011 and the revision of AS3959-2018, have increased the stringency around the selection of windows and doors for new build or renovation projects in bushfire prone areas. These changes are intended to reduce the risk of loss of life or damage to property in bushfire areas.

aluplast systems are designed to withstand the harshest conditions. Our BAL40 windows and doors use the latest technology in German hardware and incorporate the latest in soft coat low-e technology from Viridian. Not only does this create a safer barrier for your home, it dramatically improves your everyday comfort by increasing the insulating properties of the Double Glazing. This keeps you cooler in summer and warmer in winter. What's more, the need for expensive fire screens and shutters on entrance and sliding doors is eliminated.

Selecting aluplast windows and doors can give you peace of mind as well as an extra layer of comfort that you may not have had access to in the past. At aluplast, we now offer Australia's most affordable, energy efficient range of BAL40-Bushfire rated windows and doors.



aluplast BAL40 rated systems include:



IDEAL 4000®



smart-slide

aluplast BAL40 certified window and door products are identifiable with the above logo. This logo confirms that the system has been developed, engineered, tested and manufactured as suitable for use in a BAL40 zone.





# Unique Properties

## **QUALITY – MADE IN GERMANY**

Experience and constant development play a crucial role in the production of uPVC windows. With close and cooperative partnerships with reliable and renowned suppliers, we focus on environmental protection, sustainability and guarantees the highest level of quality and performance.

The extruded aluplast uPVC window profiles are tested according to local standards and are subject to constant quality control.

## **RESPONSIBILITY – FOR THE ENVIRONMENT**

uPVC windows do not only present long-lasting durability but they can also be recycled which is another environmental advantage.

Plastics are up to 100% recyclable without loss of quality. Due to the fact that PVC windows are produced environmentally friendly, the PVC windows can be made out of recyclable material and can be re-used in the future to extend the lifecycles.

Up to 40% of a home's energy loss can come from the window and door area, these parts of the building envelope are the focus of the efforts to save valuable energy and reduce the costs for heating and/or cooling.

The uPVC windows of aluplast profiles are suitable even for the top ranked Passivhaus-Standard (Passive House Standard). This fact ensures the lowest energy consumption. Our profiles are also in compliance with the latest Environmental Product Declaration (EPD) according to the DIN ISO 14025 which reflects the superb results of the health – and environmental aspects of the uPVC in the whole life circle.

## **INNOVATION – AT THE HIGHEST LEVEL**

Based on our expertise, we develop innovative high-quality products that set professional standards in our field. aluplast profiles exceed today's requirements for heat and noise insulation, burglary resistance and are of elegant design. To buy our products is to buy long lasting durability, to choose the finest quality, backed by a solid company with many years of experience.

Save energy, reduce costs and secure the future – with aluplast.



## aluplast® - Specialist for window and door systems

aluplast GmbH is one of the leading system providers of PVC windows, main entrance doors, roller shutters and controlled domestic ventilation systems. The family-owned company headquartered in Karlsruhe was founded in 1982 by Manfred J. Seitz. Today, aluplast has 10 production sites worldwide and customers in more than 80 countries. With its wide product portfolio, the company offers almost any possible window construction and variation. Its success is based above all on the company's market proximity that always results in pioneering innovations.

Learn more at [www.aluplast.net/au](http://www.aluplast.net/au)