



IKRA
WINDOWS SYSTEM



Energy efficient window & doors with aluplast-technology

uPVC WINDOWS YOUR PERFECT CHOICE



Energy efficient window & doors with aluplast-technology






Superior quality product and excellent service

Owned by PT. Millenium Jaya Perkasa, the primary focus of IKRA as a truly global company is to meet the requirements of our customers. Customers here, isn't just firms that directly purchase our products, such as window manufacturers and dealers, but also building owners and architects whose include readymade construction elements equipped with our profiles in their planning or use them in their buildings.

In order to give a satisfactory service to our customer, we are really focusing on our superior quality products and excellent service. But still, the most important thing is the fact that it is our top priority to deal with our customers and suppliers in a fair manner and to work in a long term partnership.





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

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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, drinking bottles or 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.



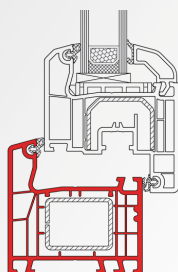
3-dimensional
section of a
uPVC window

Front view
of a uPVC
window



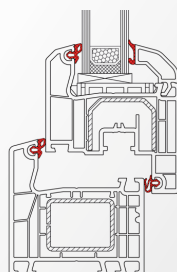
How is the uPVC window constructed?

The detailed section of single components of a uPVC window



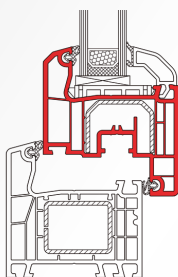
WINDOW FRAME

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



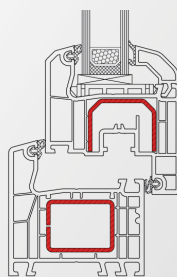
GASKETS

co-extruded gaskets ensure improved heat and sound insulation.



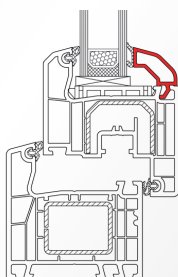
WINDOW SASH

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



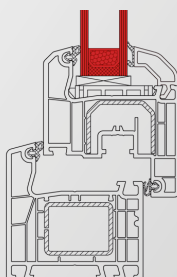
STEEL REINFORCEMENTS

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.

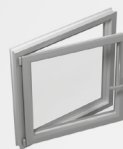
Window types there is something for every taste

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.



TURN FUNCTION - OPENING INWARDS

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



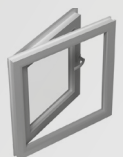
TILT FUNCTION - OPENING INWARDS

The window can be tilted to ventilate your room but protect from intrusion.



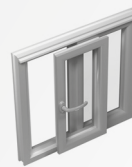
TILT-AND-TURN FUNCTION

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



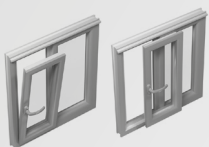
CASEMENT - OUTWARD OPENING

The sash is to be opened outwards.



SLIDING WINDOW

The sash can be slid to the side to open the window.



TILT-AND-SLIDE WINDOW

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



LIFT & SLIDE

The sash is lifted by moving and ensures a much better seal than a sliding window

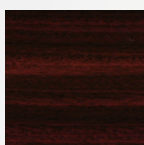
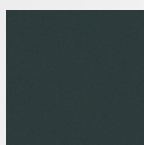
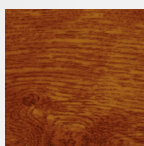
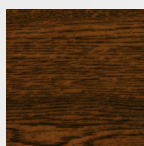


FOLDING WINDOW

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



Many combinations available

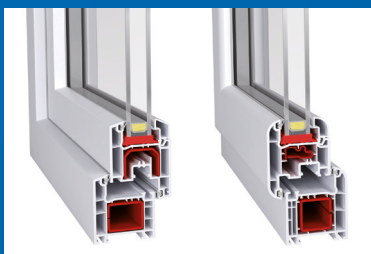


UPVC WINDOWS ARE NOT NECESSARILY WHITE

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

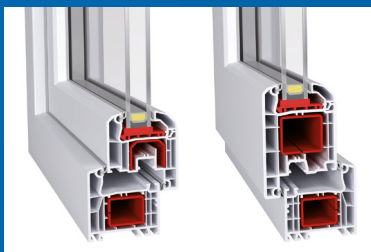
Product range, full of possibilities

Windows are a long-lasting investment. For this reason you should select a product that can really satisfy your requirements.



IDEAL 2000®

IDEAL 2000® is the most substantial 3 to 4-chamber window system with two levels of sealing and a 60mm 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-AND-SLIDE DOOR 85 MM

With its smooth-running lifting mechanism, even huge sliding elements – with a width up to 3m, a construction depth of 85 mm 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.

Hardware - essential background

Hardware has a wide range of functions. It connects the window casement with the sash and allowing the movement of the sash. For this reason, we would like to present you 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 the first choice is a lockable handle. This locking mechanism increases a window or door security.



TURNING HANDLE

The essential operating control of a window fitting is the turning handle. Only a 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 the most different 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:

TINTED GLASS

Colorants added to the basic glass batch that gives the glass color and reduces the transmission of light through it. The color extends through the thickness of the glass.

TEMPERED 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 panels of glass permanently bonded together with one or more interlayer. It offers good acoustic insulation and a high protection factor against burglary.

DOUBLE GLAZING

Double or even triple glass window panels 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 insulated glass units the space between the glass panes is thoroughly dried and the edges are sealed to eliminate possible condensation and provide superior insulating properties.

LIGHT ADMISSION

Indicates the amount of visible light transmitted. The higher the visible transmittance, the more light is transmitted.

SOLAR HEAT GAIN COEFFICIENT

The amount of directly transmitted and absorbed solar energy that enters the building's interior (when compared to an open space). The coefficient should be as low as possible.

! 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.

Noise reduction - feel the silence & the comfort

Open Window
(heavy traffic) ~ 80 dB

Old Window
(single glazed) ~ 60 dB

Standard Window
(double glazed) ~ 48 dB

uPVC Window
(Ideal 4000) ~ 35 dB

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

! Please note

The lower the U-value, the better!

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

U-Value (U_w)

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

Inner values save costs

Energy-saving calculations [Examples]

RIO DE JANEIRO / BRASIL:

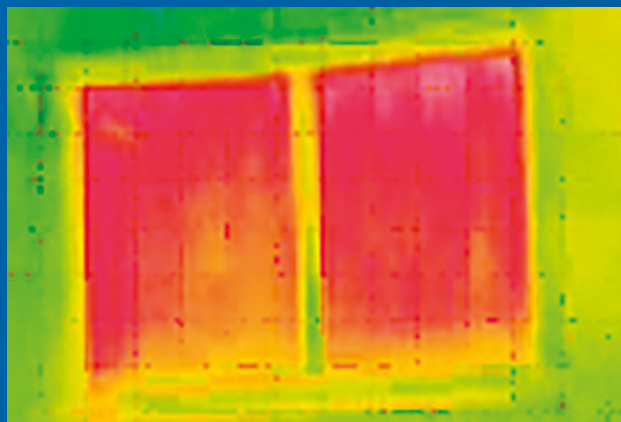
Savings: first year*: 790.62 EUR

Savings after 20 years: 26,142.64 EUR

*Assumption: window area of 30 m²,
0.10 €/kWh, price increase: 5% p. a.

Not only is the construction depth of a window crucial to save energy – it is also the inner value of a window that is convincing. The developing of isotherms demonstrates the significant improvement in the insulation quality:

SINGLE GLAZING WINDOW



MELBOURNE / AUSTRALIA:

Savings: first year*: 865.11 EUR

Savings after 20 years: 28,605.79 EUR

*Assumption: window area of 50 m²,
0.18 €/kWh, price increase: 5% p. a.

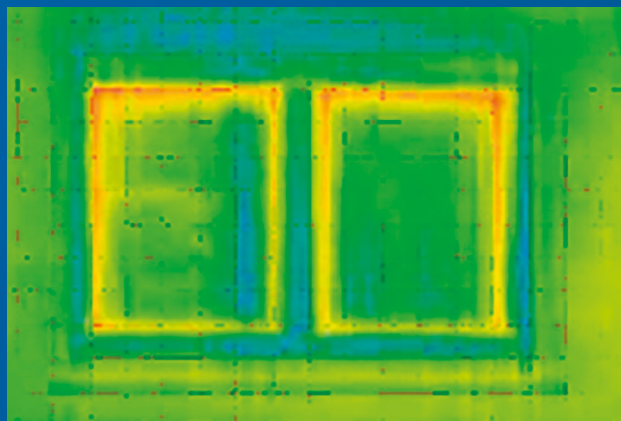
DUBAI / UNITED ARAB EMIRATES:

Savings: first year*: 1,130.61 EUR

Savings after 20 years: 37,384.78 EUR

*Assumption: window area of 30 m²,
0.07 €/kWh, price increase: 5% p. a.

UPVC WINDOW SYSTEM IDEAL 4000® INSULATING GLAZING



CAPE TOWN / SOUTH AFRICA:

Savings: first year*: 416.90 EUR

Savings after 20 years: 13,785.23 EUR

*Assumption: window area of 40 m²,
0.12 €/kWh, price increase: 5% p. a.

MUMBAI / INDIA

Savings: first year*: 1,001.32 EUR

Savings after 20 years: 33,109.55 EUR

*Assumption: window area of 25 m²,
0.08 €/kWh, price increase: 5% p. a.

IDEAL 4000®

($U_w = 1.1 \text{ W/m}^2\text{K}$) compared to a single glazing aluminum window ($U_w = 5.2 \text{ W/m}^2\text{K}$) Based on the different local specifications like room size or weather conditions, your savings may vary from the examples.

These examples are based on conditional assumptions and history based weather conditions, like heating and cooling degree days. We can not make a guarantee for the example data provided.



Unique Properties

QUALITY – MADE IN GERMANY

Experience and a constant development play a crucial role in the production of uPVC windows. With close and cooperative partnerships with reliable and renowned window manufacturers, aluplast focuses on environmental protection, sustainability and guarantees a maximum in quality and accuracy.

The extruded aluplast uPVC window profiles are tested according to German 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.

As energy losses of housing mainly (40%) arise around 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 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 meets today's requirements for heat and noise insulation, burglary resistance and in an 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 – the system provider

The company aluplast was founded in 1982 by Manfred J. Seitz. Flexibility, a fast decision-making process, great emphasis on ideal cooperation and offering market-ready, appropriate products to enable aluplast to meet global requirements. From reasonable priced to exclusive highvalue solution the system provider sets its value on the market needs.



Up to the present, the company has remained to be a family owned company and is being managed by the founder's sons Dirk and Patrick Seitz.

Today, aluplast with its high-quality window solutions is known as the technology leader in the field, presenting at least one brilliant innovation every year. This also applies to aluplast's latest development: energeto®, an energy-efficient window frame profile with metal-free thermoplastic reinforcements. This patented and highly awarded window system is developed by aluplast and our partner BASF – the chemical company. energeto® allows the production

of a window system both thermally insulating and economical at the same time without the need of steel reinforcements, which was impossible prior to that. A unique thermal insulation of up to $U_w = 0.60 \text{ W/m}^2\text{K}$ can be achieved by using energeto®.

Over the past decades, the company has been developing a worldwide network of more than twenty production and sale subsidiaries. Day by day, the uPVC window system provider ensures quality and best technical support to our partners, worldwide.

Service and innovation made in Germany.



Entrepreneur des Jahres
Finalist 2011

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window-Systems

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