



Corporate and product portfolio - Tropical Export

SPECIALIST
FOR WINDOW AND DOOR SYSTEMS

www.aluplast.net

Contents

1 Company portrait
// page 04

2 Milestones
// page 06

3 Technologies
// page 08 ff

- Fully automated glazing robot
- bonding inside
- Advantages
- Tropical Compound
- Experience
- Decors

4 Product portfolio
// page 16 ff

- IDEAL series
- Residential doors
- Sliding windows
- Lift-and-slide door

5 Supplies
// page 26

6 Sustainability
// page 28

7 aluplast international
// page 30



A high-profile company.

This motto ran like a golden thread through the last 30 successful years – and will do so in the future

During the last 30 years, technology underwent dramatic changes. At the same time, customers no longer settle for standard solutions.

aluplast has accepted this challenge: We know our market in detail and detect trends and tendencies at an early stage which allows us to act flexibly and very successfully.

For this reason, our company stands out – throughout Europe and beyond. Thanks to strategic buy-outs and organic growth we gained further market shares. Today, aluplast is the leading provider for plastic window profiles, both at a national and international level. Within only 30 years, aluplast became a global player – 24 production sites and sales offices all over the world

secure our company's excellent positioning in the market.

For the future, the group of companies sees good prospects, for our united Europe and this increasingly globalized world guarantee perfect opportunities for further healthy growth also in new markets.

The entrepreneurial Seitz family, committed and motivated employees and 30 years of know-how and ground-breaking ideas set free a dynamism and creativity that permeate the entire company. "We at aluplast are well prepared for future challenges and look forward to move ahead towards the future together with you." (Dirk Seitz, CEO)



Our philosophy. Our formula for success.

Thanks to trend-setting innovations, cooperation with partner companies, flexibility and a stringent product policy, company founder Manfred J. Seitz has managed, with his two sons Dirk and Patrick Seitz, to cultivate one of the most successful businesses in the industry within only a few years

At an early stage, aluplast recognized its responsibility for the people and the environment and consistently applies the principles of sustainable entrepreneurship.

INNOVATION

Constant development and innovation is the key to our and our partners' success. Every year, aluplast can present convincing market-driven product innovations developed on the basis of the analysed market requirements and our customers' needs.

FLEXIBILITY

Even though aluplast has become a global player, the company has maintained the positive attributes that are characteristic for small companies. Our greatest strength is above all our flexibility. Short communication channels and lean structures allow us to respond rapidly and dynamically to customer demands and market requirements.

PARTNERSHIP

Customers, partners and the whole aluplast staff are the centrepiece and the motor of our action. Moreover, close cooperation between the aluplast headquarters and our production plants and sales offices goes beyond usual cooperation. By this means, synergies can optimally be used.

COMPATIBILITY

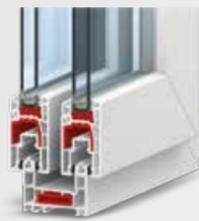
"Compatibility" is the magic word of our product policy. All aluplast product series are complementary and can be combined with one another, which extremely facilitates further processing for the window producing companies. The entrepreneurial Seitz family subscribes to this product philosophy and pays close attention to ensure that each new product meets this principle.

Our milestones.



1995

- Backstop gasket systems
- IDEAL 1000®
- IDEAL 2000®



1996

- Sliding window 73mm
- Centre gasket system IDEAL 3000®



2003

- IDEAL 4000®-NL



2008

- energeto®, the first steel-free uPVC window



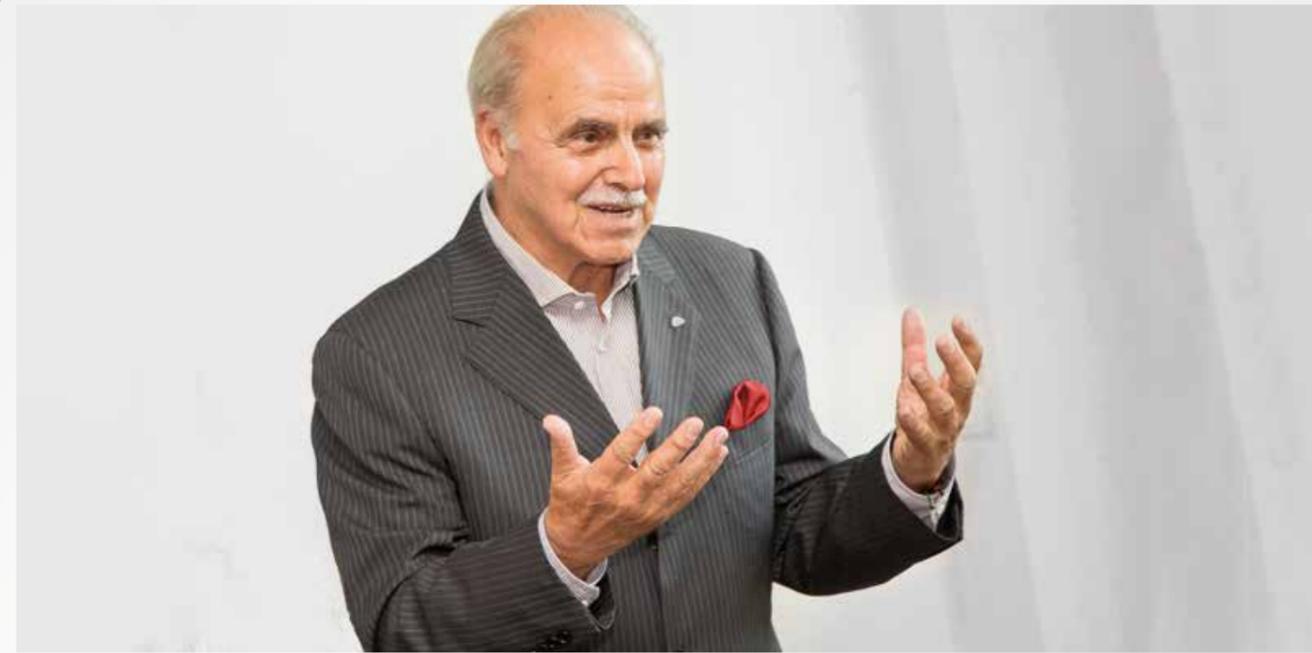
2009

- energeto® foam inside



2013

- Modular lift-and-slide door 85mm



Pioneering spirit – Success factor for the future.

From the very beginning until today, aluplast, constantly launching new products, gave fresh impetus for the window branch and finally turned into the leading innovator of the industry sector

Pioneering spirit and hard work paved the way to this unparalleled success. In this spirit, aluplast always put emphasis on the development of new technologies that enable the company to offer their customers innovative products with unique selling points.

Having developed an elaborated innovation process, aluplast can anticipate the needs of their customers and the markets. Keeping its finger on the pulse of the industry, the company will continue to offer optimal solutions and develop cutting-edge products.

aluplast began early to strike new paths in the window sector. In the mid-90ies, the uPVC profile provider introduced the system principle. "Back then, no other company had the heart to

use the system principle, even though the idea was pretty simple", Manfred J. Seitz remembers. Another important innovation developed by aluplast was the co-extruded gasket for the frames and sashes to provide a better sealing. Processors save time and money and increase process reliability with these gaskets. In contrast to the competition, aluplast focussed on the future-proof centre gasket system with a third gasket in the sash.

When aluplast launched the window profile energeto® in 2008, the company celebrated its biggest success so far: The combination of "bonding inside" (bonding technology with special sashes with centring lip) and "powerdur®" (special fibre-reinforced plastics in the frame) catapulted the product to the top of the window bestseller list.

Technologies

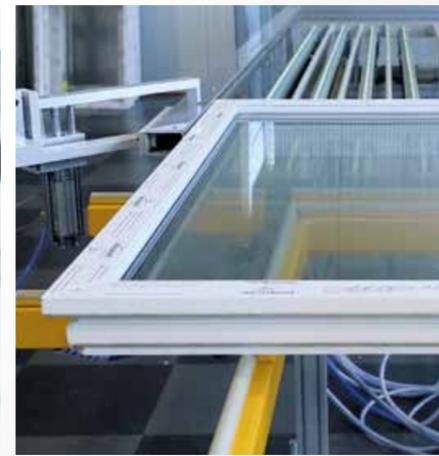
for more productivity



Innovative: Fully automated production with glazing robot

New technologies for efficient production processes: The new glazing and bonding robot that is already in use at the aluplast Technology Centre in Karlsruhe, lifts the glazing units from the racks and places them inside the sash frame. After that, the bonding agent is applied fully automatically. Then, the sash can be further processed, and the element can either be combined with the frame, or set aside in order to buffer the whole process.

As bonding is carried out before sash and frame are combined, the production process is much more flexible; for example, frame and sash can be delivered separately.



Trendsetting: bonding inside - a strong bond

With the bonding technology, aluplast once again set a new trend in the industry

There is good reason why so many processors inextricably associate this technology with aluplast.

The benefits are obvious: The bonding agent creates an extremely strong bond between glass and sash. Thereby, the glazing unit's weight does not only rest on some glazing blocks but is distributed over the sash profile's entire length. This prevents warping of the sash and renders hard-

ware adjustments unnecessary. But that's not all: Bonding the glazing unit to the sash also increases the overall stability of the element. By this means, steel reinforcements in the profiles are no longer needed in standard-sized windows. Abandoning the use of steel eliminates the old problem of thermal bridges and hence provides improved thermal insulation. Another advantage especially for window installers: Without steel reinforcements, the profiles weight is reduced by up to 60%.

Advantages of 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.

! Please note

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



The unparalleled material „PVC“ offers a whole range of outstanding product properties for a window that remains unbeaten by any other raw material. Furthermore, purchase costs of uPVC windows are far more economical than for 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 which preserves the nature, especially the tropical forests
- energy saving (a real energy champion)

2. QUALITY OF UPVC WINDOWS

- uPVC is completely harmless to humans
- excellent sound insulation, especially in the growing urban regions
- 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

- can be easily cleaned by using a mild detergent or simply soapy water
- resistant against termites and do never rot, rust or corrode
- cannot be deformed by moisture and temperature differences
- prevent development of diseases caused by mould and bacteria
- protect the occupant because of their 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

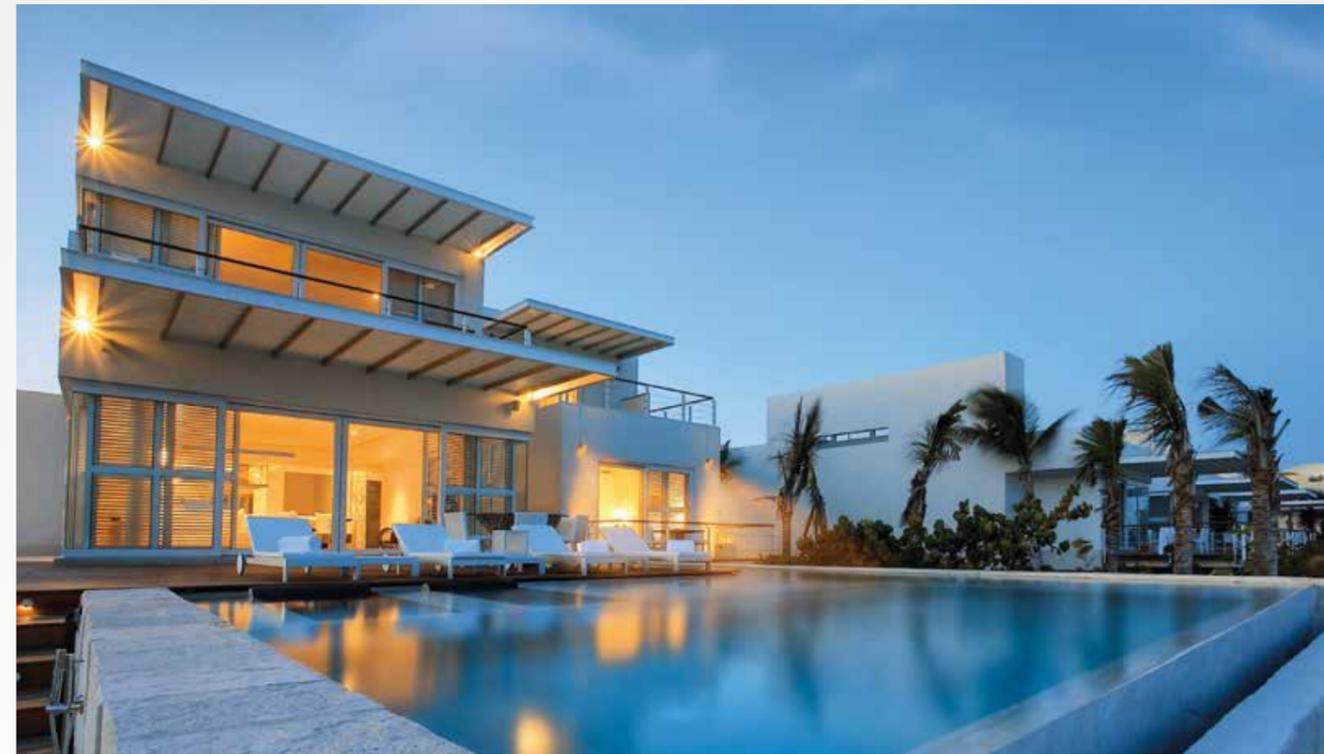
Tropical Compound

for regions with high UV radiation

Higher UV resistance - with aluplast profiles made of our special tropical compound

In regions with high UV radiation, the material of uPVC profiles needs a special formulation in order to resist the negative effects of sunlight, such as discolouration.

After many years of research and development, aluplast can provide a special uPVC compound that meets the challenging requirements of the hot climate prevailing in Asia, Africa or Australia.



Experience

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 test, 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 aluplast window system 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.

Colourful world



The aluplast colours: A selection, as colourful as the world

The world is filled with colours – from red over yellow to violet and black.

It is hard to imagine a life without colours when we see the world of colours in all its enriching beauty. To those who feel inspired to redesign and colour their homes, aluplast offers a wide range of window Decors to choose from.



Decors



nut tree golden oak anthracite grey mahogany

aluplast offers several decor variations which allows you to individually design the façade. Naturally, all decor foils feature the new cool-colors technology that set new standards: This technology guarantees considerably improved performance characteristics as well as a longer life span of the surfaces. Cool-colors perfectly combine function and design: Their special patented pigments measurably reduce the surface temperature of laminated window profiles.



aluskin® aluminium shells

The elegant appearance of aluminium is very en vogue these days. aluplast believes in the intelligent mix of plastic and aluminium. Covering uPVC windows with exterior aluminium shells simply clipped onto the plastic profile combines a whole bunch of benefits a pure aluminium window cannot come up with.

The result is a high-end product available for the IDEAL 4000® and lift-and-slide systems, combining an appealing design, individuality and the highest level of security. Aluminium shells can be butt-jointed or mitre-jointed in the frame corners.

IDEAL series

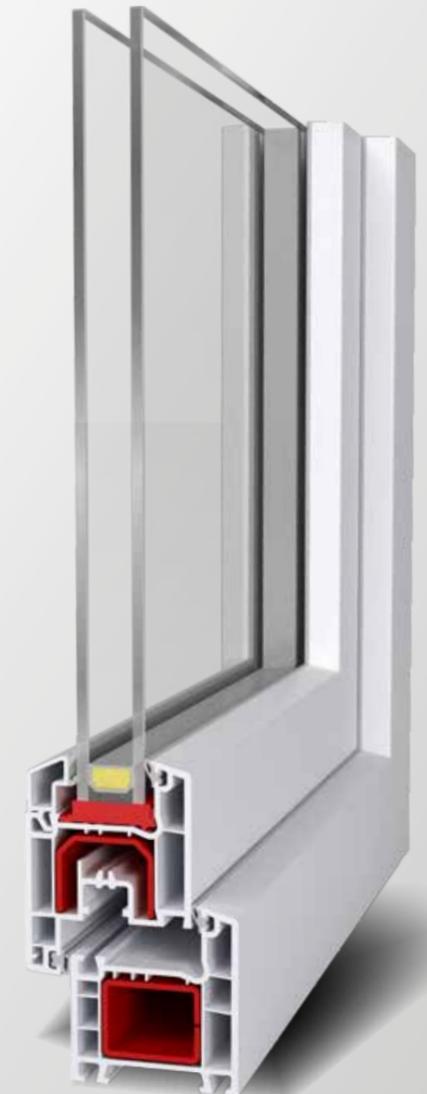
Even though windows comprise only 8% of the entire building envelope they cause almost 40% of the building's heat loss

It is therefore all the more important to choose the right window system according to your personal requirements. aluplast offers a wide range of uPVC window systems that are all compatible with each other and meet the individual requirements of different regions and markets.



IDEAL 2000® 60 mm profile depth

- thermal insulation of the standard combination $U_f = 1.6 \text{ W/m}^2\text{K}$
- backstop gasket system with two sealing levels
- glazing thickness up to 35 mm
- design variety in the sash (classic-line recessed | round-line recessed)
- tested burglar resistance class RC2
- concealed drainage is possible
- excellent sound insulation up to noise insulation class IV
- available in numerous decor variations





IDEAL 4000® 70 mm profile depth

- thermal insulation of the standard combination $U_f = 1.3 \text{ W/m}^2\text{K}$
- backstop gasket system with two sealing levels
- glazing thickness up to 41 mm
- design variety in the sash (classic-line recessed)
- tested burglar resistance class RC2
- concealed drainage is possible
- excellent sound insulation up to noise insulation class IV
- 5-chamber system as standard combination
- available in numerous decor variations
- available with aluskin® aluminium shells



IDEAL 5000® 70 mm profile depth

- U_f value = $1.2 \text{ W/m}^2\text{K}$
- centre gasket system with three sealing levels for increased burglar resistance
- glazing thickness up to 41 mm
- design variety in the sash (classic-line recessed | classic-line semi-recessed | soft-line semi-recessed | round-line semi-recessed)
- tested burglar resistance class RC2
- concealed drainage is possible
- excellent sound insulation up to noise insulation class IV
- only available in decor variations as well as with aluskin aluminium shells



Residential doors

Your calling card to the outside world

For this reason, it should perfectly harmonize with the architectural style and design of the house, and at the same time provide optimal thermal insulation. It is therefore all the more important to choose the right system to meet individual needs.

aluplast offers a wide range of residential door designs that are all compatible with the window systems and that meet individual thermal insulation requirements. From aluminium shells to decor lamination: The visual appearance leaves nothing to be desired.

Main entrance door 60 mm

- Thermal insulation (U_f value of $1.6W/m^2K$)
- perimetral interior gasket and additional exterior gasket for outstanding thermal insulation
- fits perfectly in the aluplast 60mm product range
- weldable corner connectors guarantee highest stability
- best selling door-system in several markets
- the use of appropriate security hardware guarantees perfect protection against burglary

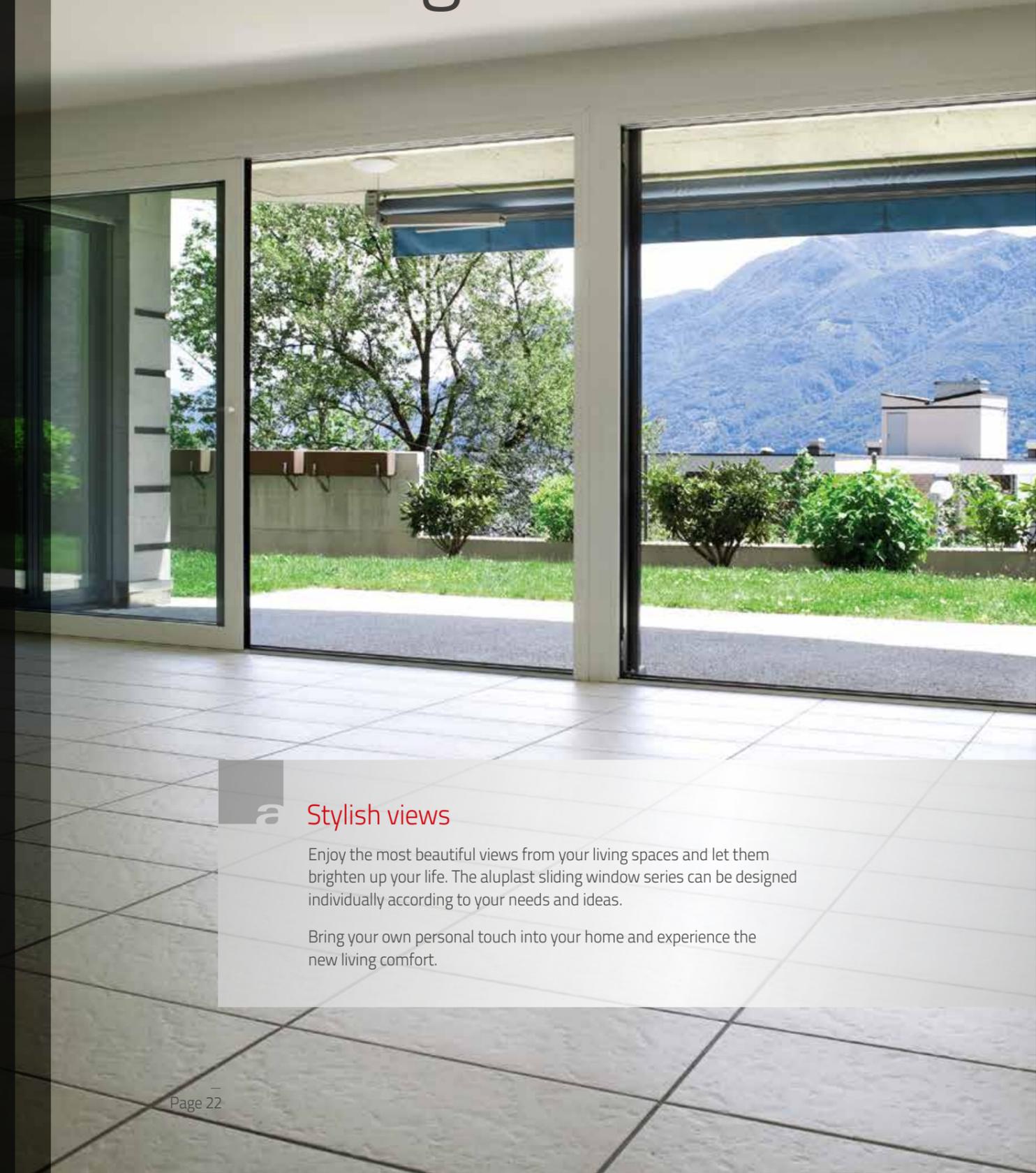


Main entrance door 70 mm

- Thermal insulation (U_f value of $1.5W/m^2K$)
- perimetral interior gasket and additional exterior gasket for outstanding thermal insulation
- thermally-broken threshold
- weldable corner connectors guarantee highest stability
- optimal safety due to high quality and safety standards
- the use of appropriate security hardware guarantees perfect protection against burglary



Sliding windows



Stylish views

Enjoy the most beautiful views from your living spaces and let them brighten up your life. The aluplast sliding window series can be designed individually according to your needs and ideas.

Bring your own personal touch into your home and experience the new living comfort.



mono-rail

- Glazing thickness up to 8 mm
- unique sliding window solution with fixed and movable parts
- wide range of accessories available due to standardised 60 mm frame system
- integrated PVC interlock guarantees perfect tightness
- fanlights and different window combinations possible



sliding window 60 mm

- glazing thickness up to 20 mm
- fine profile design
- Steel reinforcements inside the profiles ensure high stability even of large elements
- the use of appropriate security hardware guarantees perfect protection against burglary
- available in numerous decor variations



multi-sliding

- glazing thickness up to 32 mm
- extension profiles for multi-track sliding windows available
- excellent structural values allow for large elements
- aluminium threshold with integrated drainage system
- easy installation
- available in numerous decor variations

Lift-and-slide door



Entering a new modular dimension

The modular system is a first in this segment: One single system allows for the manufacture of three different products with different thermal insulation properties, from elements meeting only basic insulation requirements to passive house suitable lift-and-slide doors.

Whichever design you choose, the product visually harmonizes with the other aluplast systems and forms an appealing and harmonious image in your rooms.



Lift-and-slide door 85 mm profile depth

- $U_f = 1.6 \text{ W/m}^2\text{K}$
- improved insulating properties
- threshold and guide rail in aluminium
- glass and panel thicknesses up to 51 mm possible
- integrated sealing for highest product quality
- available in numerous decor variations
- available with aluskin® aluminium shells
- easy to assemble



Ventilation systems

for an ideal room climate

Compatible with many systems while practically invisible

- suitable as feed air opening in combination with air extractor systems
- self-regulating combustion air supply for gas/oil furnaces and open fireplaces (calculation required)
- fitted in the upper area of the window between frame and sash and hence invisible when the window is closed
- ventilation opening not only above frame/sash but also above transoms

Basic Air plus® and REGEL-air® – and mould is a thing of the past!

aluplast ventilation systems are fitted in the upper area of the window between frame and sash and ensure constant controlled air change without the need to manually ventilate

These simple yet highly efficient systems guarantee carefree living regarding mould growth.

Mould affects not only the visual appearance of your rooms but also your health due to the toxic mould spores. The main reasons for mould growth are deficient thermal insulation, bad construction, missing ventilation planning, improper interior insulation and an increased level of humidity (residual moisture from construction or wrong ventilation habits).

In order to solve this problem aluplast developed self-regulating ventilation systems that control the air change rate in accordance with the environmental conditions and by this means provide fresh and hygienic air while keeping energy consumption low.

BASIC AIR PLUS®

- heat transfer coefficient of only $U_f = 0.82 \text{ W/m}^2\text{K}$ possible
- high air passage values from air pressure values of 2 pa on
- tested sound insulation up to class IV / 42 dB
- driving rain resistance up to class E 750

- ventilation for moisture protection according to DIN 1946-6 standard possible
- meets the requirements of the German Energy Saving Ordinance (EnEV)

REGEL-AIR®

- consists of one to two individual ventilators of 125 mm width
- high air passage values in the range from pressure differences up to 20 Pa
- automatic lowering control in the range for main weather at 20 - 30 Pa
- sound insulation possible up to 42 dB (up to sound insulation class IV)
- can be fitted quickly and without milling and drilling
- can be fitted easily in windows that are already in place
- integrable in the profile series IDEAL 2000®, IDEAL 4000®, IDEAL 5000®, IDEAL 6000®, IDEAL 7000®, and IDEAL 8000®

Green world



Sustainability and eco-management

The awareness that many of our natural resources are exhaustible and the obligation to act sustainably that this knowledge carries, have always determined our entrepreneurial activities

Aluplast, sustainable management means to bring production in line with the principles of energy efficiency and recycling. All aluplast products make an essential contribution to energy conservation.

ENERGY EFFICIENCY: EXCELLENT!

Together with other companies, in 2009, aluplast established a pilot network aiming to reduce energy consumption and hence greenhouse gas emissions.

This strong commitment to sustainability has been rewarded: Since July 2013, aluplast is certified according to DIN/ISO 50001 for its successful energy management system. Furthermore, the aluplast production plants are equipped with the latest machinery – the most energy-efficient plants within the industry in Europe.

RECYCLING: EXEMPLARY!

Because sustainability plays such a crucial role at aluplast, recyclability is a top-priority and has been pushed for years.

The huge advantage of the material PVC: It can be recycled up to seven times without sacrificing material quality or processing characteristics. Old window profiles, rejects and cutting residues are

shredded in the granulator; the different materials are separated and then recycled. By this means, the company can guarantee a closed-loop material cycle for the premium product energeto®. aluplast, the recycling pioneer in the industry, is one of the initiators of the recycling association Rewindo and has signed a voluntary commitment on sustainable management.

THE ENERGY SAVING WINDOW energeto®: UNIQUE!

energeto® is the best window worldwide in terms of energy conservation. With top values of up to 0.60 W/m²K, immense heating and cooling cost savings are possible, and this in turn actively reduces CO₂ emissions and conserves the environment.

Moreover, steel-free profiles weigh up to 60 % less than its steel-reinforced counterparts, which has a positive effect on transport costs and facilitates the work of the installation staff.

RESPONSIBILITY TOWARDS PEOPLE AND THE ENVIRONMENT: IMPORTANT!

aluplast assumes responsibility for people and the environment and, together with customers and partners, contributes actively to the protection of our natural environment!

Warranty Certificate

Europvc Windows and Doors Co. Ltd.
157/4 Moo 8
20260 Chomburi, Nongprue, Banglamung
Thailand

This is to certify that aluplast GmbH guarantees for white uPVC window profiles for

10 years

as from the date of fabrication for a stable quality with regard to

1. Retaining the shape according to technical drawings within the tolerances of RAL – GZ 716/1
2. Weather resistance (change of colour); grade 4 of the grey measure according to ISO 105-A03 will not be exceeded up to a global sky radiation of 140 Kcal/cm²/year (tropics mixture)
3. Shock resistance in cold according to RAL – GZ 716.

The testing methods are in correspondence with the stipulations for PVC-windows according to RAL – GZ 716.

The fabricating and mounting instructions for aluplast window profiles have to be kept.

The guarantee refers to a right of free replacement delivery of the queried profiles. No further claims –regardless of the reason- will be accepted

All defects have to be reported to aluplast within 5 days after appearance.

Karlsruhe, 28.08.2014



Head of System Technology



Head of Quality Management

Certificate of Quality

Europvc Windows and Doors Co. Ltd.
157/4 Moo 8
20260 Chomburi, Nongprue, Banglamung
Thailand

Karlsruhe | 25.08.2014

aluplast ensures the use of high-quality PVC to manufacture high-standard U-PVC profiles. To guarantee a top-level of the product-range, aluplast is controlled by different independent quality agencies like BSI, IFT Rosenheim, TÜV and many more and achieves all related certificates such as RAL 716/1 & BS EN 12608 for its entire products.

In general, to assure high quality window fabrication, in cooperation with our customers we train our fabricator's production staff and QC department on a regular base.

In particular, we certify and confirm that our fabricator namely **Europvc Windows and Doors Co. Ltd.** is using our IDEAL 2000®, IDEAL 4000® and Sliding systems and their technical teams have been trained by aluplast instructors. They achieve a high quality performance in fabrication of standard windows and doors.

Europvc Windows and Doors Co. Ltd. has been inspected by our technical managers and inspectors in accordance with the visit schedule to this certificate. Novin Ayegh Energy uses aluplast profiles and the performances and production quality meets our standards according to our "Verarbeitermappe | manual book".



aluplast GmbH
Market Manager Asia, Africa and North America