



TECHNOLOGY > SAFETY > RELIABILITY > YAWAL

GUIDE TO ALUMINIUM SOLUTIONS  
**FOR THE HOME**

## ABOUT THE COMPANY

Yawal S.A. is one of the leading suppliers of aluminium architectural systems in Poland. This is owed to the experience gained over the course of its 25 years of existence and a broad range of innovative solutions. The systems of the enterprise have been designed by experts to be environmentally-friendly and energy-saving constructions used for building windows, doors, facades, curtain and partition walls, conservatories, skylights, railings, and sun visors.

The requirements set out for modern architecture change very quickly. Therefore, apart from the standard range of aluminium systems in the company's catalogue, Yawal S.A. also focus on bespoke solutions designated for use equally in commercial, industrial and housing construction.

The company's systems are sold in markets across the whole of Europe. At present, the partners and clients of Yawal S.A. include several hundred domestic and international business entities. The company's head office and production sites are located in Herby near Częstochowa.

Thanks to the whole production process being conducted within Yawal Group, our company is characterised by complete independence and market flexibility. We use components of the highest quality for the production of our systems which are supplied by the best specialists in the market in the sectors of fittings, gaskets, fastening elements, and care products.

We accompany our partners through every stage of the investment, from project and concept support, through to the selection of optimal solutions, to their implementation and after-sales service. Realising the entire production process within the Yawal Group gives full autonomy of operation and market flexibility, which allows the Company to offer highly competitive prices.





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## WHY ALUMINIUM?

The modern world presents an ever-growing demand for energy which simultaneously leads to significant climate changes resulting in the need to search for innovative and environmentally-friendly solutions. Aluminium may be a remedy for these challenges. It is a material that can be entirely re-processed and generates sustainable energy solutions such as lighter, less fuel-consuming vehicles, components for wind power plants, and perhaps most importantly – energy saving buildings.

For years aluminium has been associated only with commercial construction. It has been perceived as a "cold" metal, not suitable for use in housing construction in the Polish climate. Developments in technology have debunked this myth by proving that aluminium is ideal for producing modern and energy saving windows and doors in our homes, which are "self-financing".

The most important feature of aluminium joinery is its durability and energy saving quality. The complex construction of profiles and the possibility of applying various types of infills guarantee the maintenance of accurate indicators of thermal insulation and the reduction of heat loss. This proves particularly important in passive and zero energy houses.



One begins to note a rapidly growing number of houses in the cityscape whose designs feature large glazings, ensuring the entry of light and opening up the rooms to their external surroundings. This is where aluminium comes in! It combines two seemingly contradictory properties - flexibility of alloys (during the production process), and rigidity of construction elements. This first feature allows for the production of narrow profiles of non-standard shapes which make the windows look slimmer and increase the surface of the pane. The rigidity of aluminium, on the other hand, permits for the design of entirely glazed constructions without the need to use any additional reinforcements.

Aluminium offers significantly greater construction possibilities, among others, due to the relatively low weight of aluminium joinery in comparison to wood and PVC. This in turn increases the ease of using window leafs and doors made of this material.



The superiority of aluminium over PVC and wood presents itself also in high resistance to harsh weather conditions. In comparison to those made of PVC, aluminium window and door profiles are more resistant to fading colours caused by sunlight. They also do not require preservation work as often as wood which has to be painted every few years. Thanks to this, their energy saving properties remain at the highest level for many years.

Aluminium windows and doors increase the safety of both you and your family in many ways. They are resistant to fire and can prevent it from spreading. Furthermore, due to its solid construction and the application of anti-theft panes and fittings, they prevent intruders from breaking into the house.

The newest technology allows for aluminium window frames to be designed to suit any architectural style. The use of the correct paints and varnishes, with a diversified structure, makes colour options practically limitless. A current trend in family homes is wood-imitating covers, which resemble natural patterns and make the window appear to be made of wood, while simultaneously maintaining durability and a low weight.

	Aluminum	Wood	ALU / Wood	PCV
Limitless choice of colours and structures	x			
Resistance to harsh weather conditions	x			
High acoustic insulation	x	x	x	
Fire resistance	x	x	x	
Tightness	x	x	x	x
Long lasting quality	x	x	x	
Stable dimensions for many years	x	x	x	
No need for frequent maintenance	x			x
Possibility of creating large-scale glazings	x			
High heat insulation	x	x	x	x
Resistance to damage	x	x	x	x
Possibility of creating non-standard shapes	x	x		
Environmentally-friendly solutions	x	x	x	
Possible application of photovoltaic solutions	x			
Possibility of creating structures with an anti-theft protection class up to RC4	x			
Possibility of installing solutions falling within the concept of smart home	x	x	x	x

## ALUMINIUM WINDOWS "TO THE WORLD"

One of the most important choices that has to be made when building a house is selecting suitable window joinery. When making this decision one has to take the following aspects into consideration: aesthetics, safety, functionality and comfort of use, tightness and most importantly - energy savings.

### ALUMINIUM ELEGANCE

Windows produced in accordance with Yawal systems enable the construction of buildings which are extremely effective in terms of architecture. They are perfect for both contemporary houses and traditional housing. The individual character of a house can be accentuated by both the size and shape and of the windows. Thanks to thin profiles, windows made of aluminium are unusually slender and rooms are therefore very bright. In addition to this, large glazings open up our houses to the beauty of external surroundings. Limitless freedom regarding the choice of colours and structure of windows is also very important.



### ENERGY SAVING

Saving energy with windows produced by Yawal systems is very easy. The most important criterion, which every buyer should consider, is the heat transfer coefficient of windows or doors ( $U_f$ ), whose value should be as low as possible. In the coming year, the construction sector will face the gradual tightening of this criterion (from 2017 -  $U_f \leq 1,1 \text{ W/m}^2\text{K}$ , and from 2021  $U_f \leq 0,9 \text{ W/m}^2\text{K}$ ). This is why specialists from Yawal use innovative technologies and materials to design systems which even today meet the aforesaid requirements and allow for the production of windows with the highest level of thermal insulation ( $U_f$  from  $0,4 \text{ W/m}^2\text{K}$ ).



### TIGHTNESS

Water tightness, acoustic insulation, and wind load resistance are further criteria which have to be taken into consideration when selecting windows. Designers of Yawal window systems use additional protective seals in their constructions, in order to provide homeowners with the best values of the aforesaid criteria. Moreover, before Yawal profiles are used for the production of windows, they are thoroughly tested for their levels of acoustic insulation, wind load resistance, and water tightness.



### COMFORT AND FUNCTIONALITY

When creating window systems our experts cooperate with the best specialists from the sectors of fittings, automatics, and fastening elements. Windows produced with Yawal systems, aside from the traditional function of opening, tilting and micro-unsealing, possess useful options like lifting, opening outwards or sliding. We pay attention to the comfort of users and strive for full automation, allowing for the remote opening and closing of windows with the help of electronic devices or a timer, and controlling anti-sun blinds which protect against excessive UV rays.

### SAFETY

Very often buyers associate large, glazed windows with a higher risk of intruders breaking into a house. Yawal has taken care of its clients in this respect also. Safety is not accidental but results from the well-considered application of the newest technology. Yawal S.A holds a certificate from the Institute of Precision Mechanics, proving that the company's systems can be used for the production of anti-theft windows in one of the highest anti-theft classes - RC4.





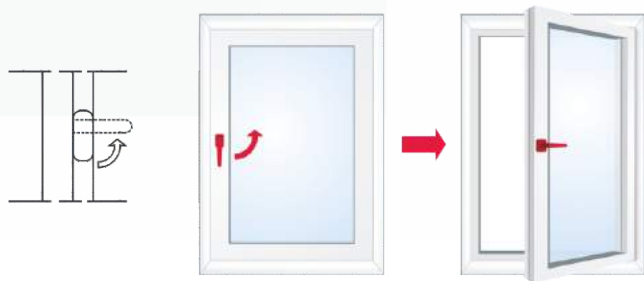
## WINDOW TYPES

Windows differ not only in terms of applied systems, fittings, equipment and dimensions. The direction and the manner of their opening is also very important.

The choice of the manner of windows opening is influenced by different factors that have to be taken into account as early as at the design stage. A primary determinant of this issue is window location in the house. Windows on the ground floor are opened differently than windows located, e.g. in the attic. Investors' requirements for functionality and usage of windows also influence the choice of the manner of windows opening.

We offer windows and balcony doors in the following configurations:

Turn window (closing - turning)



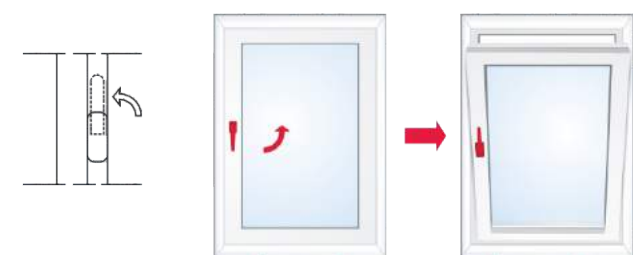
Turn and tilt window (closing - turning - tilting)



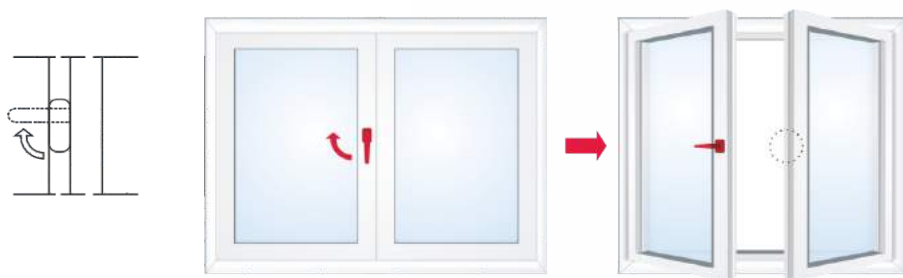
Tilt and turn window (closing - tilting - turning)



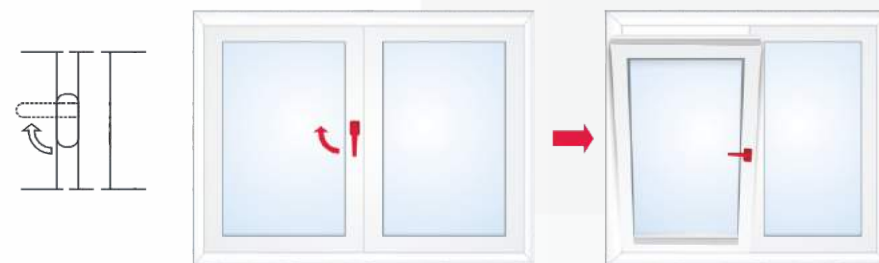
Tilt window with side handle (closing - tilting)



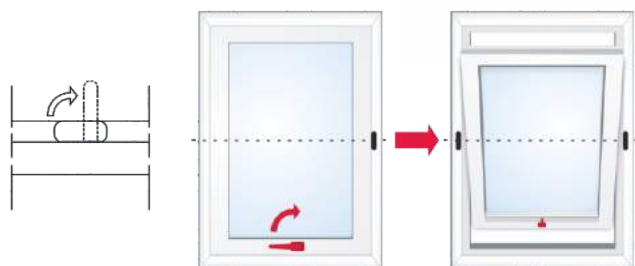
Turn double-sash window with movable mullion (closing - turning)



Tilt and turn double-sash window with movable mullion (closing - tilting - turning)



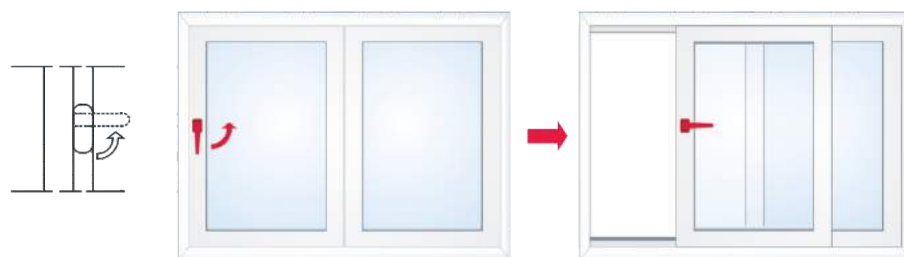
Pivot window with horizontal rotation axis (closing - opening)



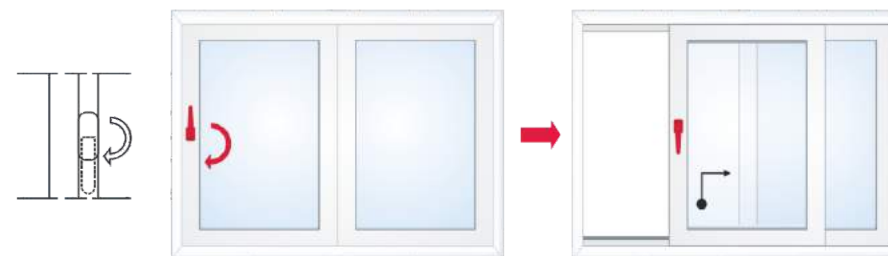
Single-leaf doors (closing - turning - tilting)



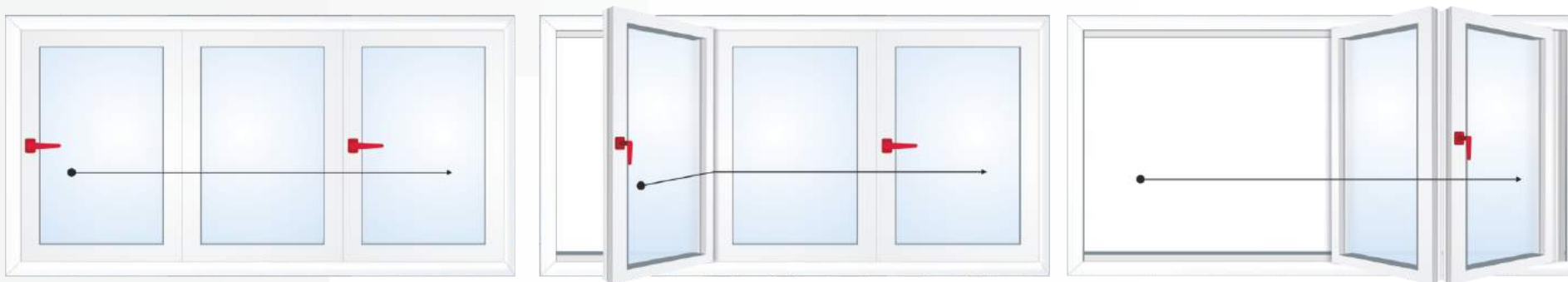
Sliding doors (closing - sliding)



Overhead sliding doors (closing - sliding)



Accordion doors (closing - turning - sliding - folding)



## GLAZING UNITS

The quality of a product is determined by the choice of both an aluminum system suitable for the intended use and a glazed infill.

### GLASS BY USAGE CAN BE DIVIDED INTO:

**Single glass** – applies to internal structures of rooms or structures in unheated buildings.

**Glazed units** – applies to external structures of rooms due to the high thermal insulation. Moreover, to improve the acoustic insulation such infills may be used for internal structures. Glazed units can be of single or multi-chambered construction. Of course, glazed units with a greater number of chambers than one is characterized by significantly better thermal insulation.

Currently, the industry standard is two-chamber glass due to thermal parameters considering the whole product.

Continued overleaf ►►







**Reflex (stopsoł)** – is through colored glass. Reflex is additionally coated with a layer of noble metal oxide which acts as a mirror, reflecting part of sunlight.

**Flashed glass** – can have a significant impact on the energy consumption of a building. By using flashed glass we obtain optimum heat balance. Only a limited amount of heat energy from the outside gets inside therefore there is no intense heat inside the room during the summer. By reducing the demand for cooling we reduce the initial investment expenditure for air conditioning systems, and each year the money saved by reducing the amount of energy used for heating and cooling causes the return on investment in glazing.

### DUETO USER PROTECTION, WE CAN USE SAFETY GLASS:

**Laminated (glued) (designation VSG)** - glass consists of two or more sheets interlaid with one or more layers of clear or colored film. They are bonded together by heating and then subjected to high pressure. For production of laminated glass you may use ordinary float glass or toughened glass. This type of glass is used in railings, and as a filling in structures without protection against falling.

**Toughened (designation ESG)** - glass which is formed by heating and subsequent rapid cooling.

As a result of this process, mechanical strength is 5-7 times higher than in case of ordinary glass. Toughened glass after breaking crumbles into small fragments without hurting the users. Additionally, toughened glass panes are characterized by high resistance to temperature differences.

**Anti-theft glass** should be used for structures on the ground floor and where the users have interest in safety. This type of glass is produced by the use of layers of special anti-theft film between several layers of glass. This glass is of different efficiency. The most commonly used for houses are P3, P4 and P5 glass panes. Where the efficiency of anti-theft protection must be very significant P6 to P8 glass is used.

To provide users with fire protection, in aluminum systems complying with the requirements confirmed by appropriate technical approval fire-resistant glass can be used. Fireproof glass has a multilayer construction, wherein sheets of glass are joined by intermediate layers made of gel mass having the properties increasing the volume under the influence of high temperature.

For external construction there is a possibility of making glazing units with no class glass.



PHOTOVOLTAIC CELLS CAN BE ALSO INSTALLED IN SEALED GLAZING UNITS (E.G. ON RAILINGS, FACADES, SHUTTERS).





SOLUTIONS DEDICATED  
TO **PASSIVE** HOUSING

## UNPRECEDENTED THERMAL INSULATION OF WINDOWS!

$U_w$  = from  $0,4 \text{ W/m}^2\text{K}$  - results comparable to insulated walls\*

\*Calculation is valid for a wall consisting of 2 layers of plaster, hollow brick 240 mm thick (tongue & groove), styrofoam EPS 80 of 40mm. thickness.



## ALUMINIUM WINDOWS BASED - TM 102HI

YAWAL TM 102HI System is designed for energy saving and passive houses. It will work in both public facilities and family housing. It is a complex system of aluminium profiles used for the production of modern types of windows, doors, and showcases requiring high thermal insulation.

The innovative construction of a window leaf with an applied insulator, set at an angle relative to the casing, ensures the beneficial strength distribution in a profile. This in turn creates highly durable profiles which can be used for the production of heavy, large format constructions. Within the system, we offer a broad range of glazing and installation options, from all types of panes, single, double and triple-chamber, available on the market.



	Heat transfer coefficient	from 0,4 W/m <sup>2</sup> K
	Maximum leaf weight	300 kg
	Permissible leaf width	1600 mm
	Permissible leaf height	3000 mm
	Anti-theft protection	RC2
	<b>Colours:</b> Possibility of making a profile with any colour from RAL range. <b>Additional options:</b> anodising, wood imitation, painting with structural paint. <b>Details on page 66-71.</b>	














## ALUMINIUM WINDOWS - TM 77HI

The TM 77HI system is a safe and innovative solution that enables the attainment of excellent coefficients of thermal insulation, acoustic insulation, protection against wind and water, as well as security. Dedicated thermal insulators act as thermal insulation, in combination with infills with high thermal insulation properties.

-  POSSIBLE PRODUCTION OF TILT AND SLIDING BALCONY DOORS
-  POSSIBLE PRODUCTION OF DOORS WITH LOW TRESHOLD
-  POSSIBLE PRODUCTION OF ROUNDED SASH PROFILE AND GLAZING BEAD

	Heat transfer coefficient	Windows - $0,8 \div 1,4 \text{ W/m}^2\text{K}$ Doors - $0,9 \div 1,5 \text{ W/m}^2\text{K}$
	Maximum leaf weight	Windows - 200 kg Doors - 200 kg
	Permissible leaf width	Windows - 1600 mm Doors - 1300 mm
	Permissible leaf height	Windows - 2700 mm Doors - 3000 mm
	Anti-theft protection	Windows - RC2, RC3, RC4 Doors - RC2, RC3
	<b>Colours:</b> Possibility of making a profile with any colour from RAL range. <b>Additional options:</b> anodising, wood imitation, painting with structural paint. <b>Details on page 66-71.</b>	









## ALUMINIUM WINDOWS - TM 74HI

This system is dedicated to constructing windows, doors and display windows with high thermal insulation properties, to be used in residential buildings, public and industrial buildings.

The thermal insulators (made of fiberglass reinforced polyamide) used in the system and the space between them were additionally filled with polyurethane foam. The system allows for the construction of large dimensions due to the use of reinforced profiles



POSSIBLE PRODUCTION OF TILT AND SLIDING BALCONY DOORS



POSSIBLE PRODUCTION OF ROUNDED SASH PROFILE AND GLAZING BEAD



Heat transfer coefficient

Windows - from 1,0 W/m<sup>2</sup>K  
Doors - from 1,2 W/m<sup>2</sup>K



Maximum leaf weight

Windows - 200 kg  
Doors - 200 kg



Permissible leaf width

Windows - 1600 mm  
Doors - 1250 mm



Permissible leaf height

Windows - 2700 mm  
Doors - 3000 mm



Anti-theft protection

Windows - RC2, RC3  
Doors - RC2, RC3



**Colours:** Possibility of making a profile with any colour from RAL range.  
**Additional options:** anodising, wood imitation, painting with structural paint.  
**Details on page 66-71.**



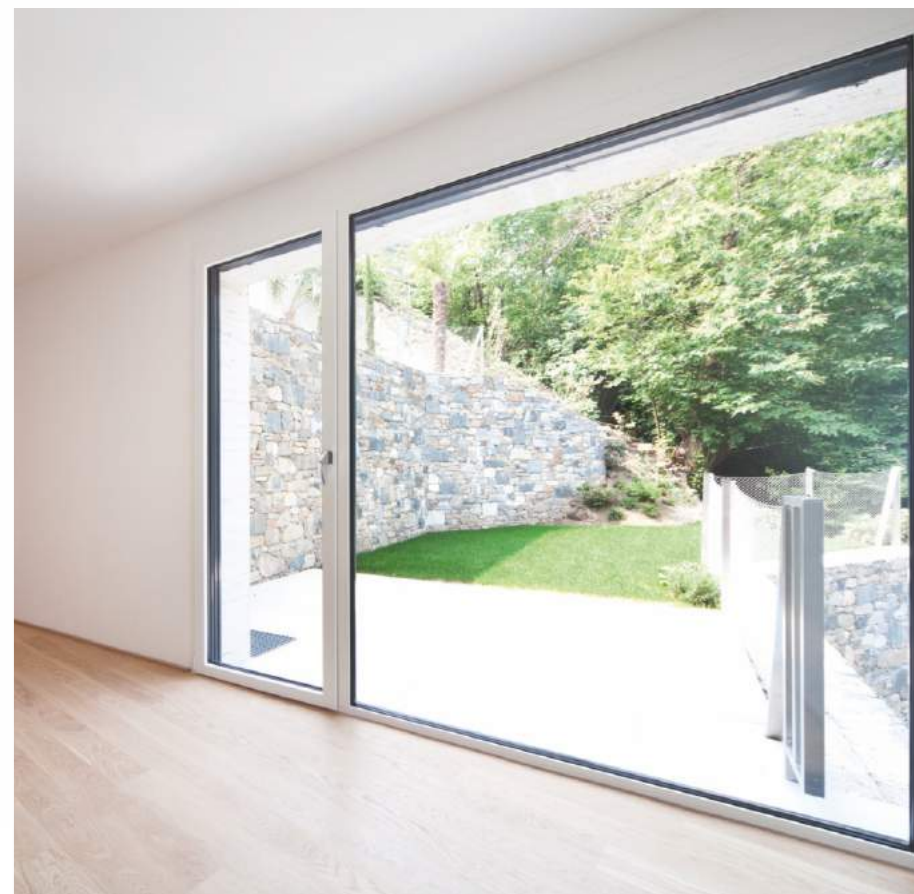
## WINDOWS WITH HIDDEN HINGES

If our intention is stylish appearance of the living room, all decor details are to be taken care of. When it comes to windows, the best idea is to order such windows that do not show their hinges. Thanks to this, even after next refurbishments they will match the interior concept.

### What is the difference between hidden and surface hinges?

Surface hinges is a traditional solution based on visible from the outside pintle hinges adjustable in three planes. In turn, a hidden hinge mechanism is concealed under the sash rebate and thus remains invisible from the outside. Even if the windows do not have an exclusive design, with no visible hinges they look light and elegant. The use of such solution affects not only the aesthetics, but also improves the functionality and tightness of windows.

The windows with hidden hinges can be ordered in turn and turn-tilt versions, in a variety of shapes.



### The weight of a leaf with hidden hinges can be up to 180 kg.

This is important, because due to high gross weight it is possible to produce windows with heavy soundproof or thermo insulating glass units which successfully protect against frost or a loud neighbor.

The presented windows with hidden hinges after the window is closed hide in the space between the leaf frame and casing. Window surface is ideally smooth and no unnecessary elements which would case dusting and soiling protrude. It is far easier to keep such a window clean.



## WINDOWS WITH SURFACE HINGES

The system of fittings is ideal for structures of windows and balcony doors made of aluminum, allowing for utilization of solutions with different shapes and sizes in a version coated with 5 varnish colors. Window/doors leaves based thereon can reach up to 2700 mm in height and 160 kg. The solution allows you to use all the traditional manners of opening: turn-tilt, turn, tilt or double sash with movable mullion and TiltFirst. It meets the requirements of the classes RC1-RC3.

The presented surface hinges is a solution based on visible from the outside hinges adjustable vertically and horizontally, and with pressure adjustment which allows for precise positioning of the leaf relative to the casing.

## WINDOWS WITH ECONOMIC HINGES

The economic system of fittings allows for equipping windows with additional accessories: a handle brake, multistage micro ventilation or placing the handle in the bottom leaf arm. The windows can be made in versions with visible or hidden hinges, in all the shapes and manners of opening and also in an anti-theft version. Covers adjusted in terms of color to the hinges may be ordered.

### DOUBLE SASH WINDOWS WITH MOVABLE MULLION

Double-sash windows with movable mullion are not divided in any place when opened which gives the impression of more space. The first window is opened traditionally with a handle, and the second using a lever lifted comfortably to a horizontal position, invisible when you close the window. You can also order windows in an anti-theft version in the classes RC2 and RC3.





## WINDOW HANDLES

Window handles along with the profile are the most important elements of window aesthetics.

Form and color of door handles are a treasure trove of creative opportunities that will suit the taste of supporters of both classical and modern style.

WE PRESENT TO YOU SAMPLE DESIGNS OF HANDLES IN A STANDARD VERSION OR EQUIPPED WITH A KEY:



Standard



Handle locked with a key



Standard



Handle locked with a key



Escutcheonless handle



Round escutcheon  
for escutcheonless handles



Example  
of escutcheonless  
handle

**Standard colours of handles** - Handles in standard colours are always available in stock as our regular product mix.

SILVER		DARK BROWN		BLACK MATT		WHITE		NIRO DESIGN	
--------	--	------------	--	------------	--	-------	--	-------------	--

Non-standard colors are available only on request.



## ELECTRIC DRIVE

Electronic drive automatically controls opening and closing of the windows.

The window sash can be opened up to 12 cm, closed and relocked noiselessly. All those functions are controlled either by a wall switch or by means of a remote control system.

The remote control allows for programming precisely the time of window opening and closing. It is also possible to combine the system with air humidity sensors located in the room that will tilt or close the window, based on their readings.

The timer allows for setting certain hours during the day, when the window is opened, and then closed and locked. Similar function is possible for weather sensors - certain values of humidity, temperature and carbon dioxide can be set. Apart from timer and thermometer, also wind and rain sensors can be integrated in the control system to increase the safety of inhabitants.



Possibility of setting any window tilt angle

The drive, integrated in the housing of fittings indivisible form the inside and from the outside, so it does not interfere with the aesthetics of the window. This solution is dedicated for very humid rooms, such as bathrooms, but it also works for windows that are inaccessible or hardly accessible, for example in the staircases.



## ANTI-THEFT PROTECTIONS

The windows and balcony doors on the ground floor are most exposed to burglary. At the same time they are expected to have an aesthetic look due to representative character of rooms located on the ground floor.

The basic anti-theft protections of an aluminum window includes:

- special handle with a button or locked with a key,
- at least one security locking point, composed of pins and security locks.

Safe use of windows is allowed by a handle incorrect position lock owing to which the window does not unhook out from the hinge, smoothly going from open to tilted position.

However if we wish to buy anti-burglary windows, we should ask the shop assistant for RC2 or RC3 certificate for the whole window. The most efficient protection against a burglar is a combination of mechanical means (e.g. window with RC2 certificate) and electronic means, i.e. opening control sensors that warn against each attempt to pry the window.



Windows and patio doors available from the ground and balcony should have anti-theft protections of RC2 or RC3 class and access control sensors.



For windows on higher storeys, not accessible from the ground or balcony, it is enough to use control sensors.



Locking point  
RC3



Opening indicator –  
Kontrakton



Anti-theft  
security pintle RC2



Anti-theft  
security pintle RC3



Standard pintle ensuring  
pressure on the sash



Standard pintle  
in a push rod strip

Kontrakton is an electronic window protection connected with an alarm system or video surveillance. At the time the magnetic field is interrupted, for example when you try to open the window, when the alarm is armed, a sensor hidden under the sash rebate sends a signal about a burglary attempt to the central unit.





## CHILDREN'S ROOM WINDOW

The best solution is to equip the windows in children's room with a protection mechanism that tilts the window before opening, working in exactly opposite way to traditional windows.

Additionally, the special handle that activates this mechanism is equipped with a lock. Turning the handle by 90 degrees allows to tilt the window, but not to open it.

The lock is released by turning the key, which allows to rise the handle up and open the sash. The locking mechanism activates itself automatically after closing the window and turning the handle to tilt position.

Electrically adjustable car windows can be blocked against opening by children with one button. It is worth applying similar solution for windows installed in children's rooms. Especially when they are located upstairs.

## OPENING LIMITER

Another interesting solution dedicated for aluminium windows and available at our network is the opening limiter with brake.

Its basic function is to protect the window sash against accidental and sudden closure. This solution eliminates the danger of sash or handle hitting the wall. There are two types of brakes defining the angle of window sash opening:

#1 opening limiter to open the window at a particular angle, e.g. 90 degrees,

#2 opening limiter with a handle, where the opening gap may be freely adjusted and the sash is locked at the selected position. This solution allows for free airing of the rooms in the summer.

The opening limiter is recommended especially with turn windows and balcony doors.



## FITTINGS FOR TILT-SLIDING BALCONY DOORS

Sliding patio windows and doors let the light inside the room, creating an ideal combination of living area and the outside environment. Sliding systems occupy less space, allowing for free space arrangement. Their operation is more convenient than in the case of traditional balcony doors opened inwards.



### SAFE HOUSE

Balcony and patio doors are the weak points most often used by burglars. Thanks to the anti-theft elements, such as anti-theft catches and lockable handles you can adjust the grade of protection measures to individual safety needs.

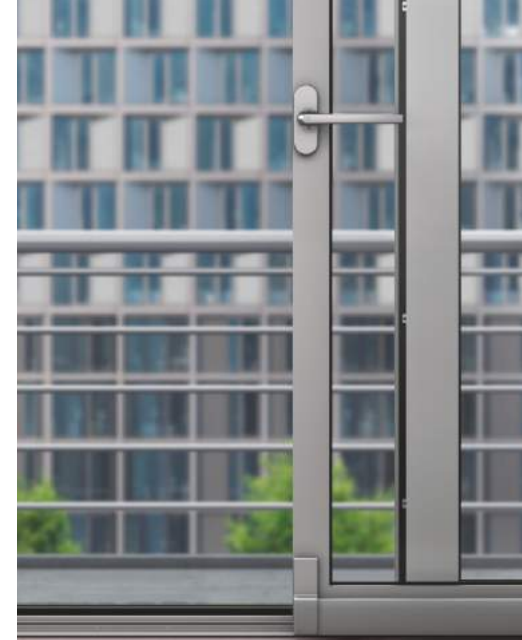
### MICROVENTILATION

Balcony doors can be optionally equipped with invisible from the outside proper micro ventilation. The leaf is set away from the frame by several millimeters, but from the outside the window looks closed.

### USE CONVENIENCE

An innovative mechanism for opening and closing parallelly sliding systems allows quiet and silent sliding.

Special cushioning elements for optimal closure and moving of leaves. All parallel sliding variants can also be intuitively operated like traditional turn-tilt windows. The use of standard window handles gives the sliding systems and turn-tilt windows uniform appearance in all rooms.





## HANDLES FOR BALCONY DOORS

Patio doors handles along with the profile are the most important elements of window aesthetics. The form and color of door handles are a treasure trove of creative opportunities that will suit the taste of the supporters of both classical and modern style.

WE PRESENT TO YOU SAMPLE DESIGNS OF HANDLES IN A STANDARD VERSION OR EQUIPPED WITH A KEY:



Handle locked  
with a key  
Colour: dark brown



Handle locked  
with a key  
Colour: black matt



Handle  
Standard  
Colour: white



Handle  
Standard  
Colour: dark brown



Handle  
Standard  
Colour: black matt



Handle  
Standard  
Colour: silver



Handle  
Standard  
Colour: dark brown



Handle  
Standard  
Colour: dark brown



### Balcony latch with a pull handle

Balcony latch can be used in systems with hidden and visible hinge part. The latch may be placed on the bottom or vertical edge of the leaf on the side of the handle. It holds the door leaf in the casing, for example after exiting to the balcony. The pull handle can be used on all doors regardless of the fitting system. It allows free tightening of the leaf to the casing which is held therein by the balcony latch.



## ACCORDION DOORS

Any room can be divided into zones very easily - by means of accordion doors based on Yawal TM 74HI system.

The accordion doors are available in two arrangements:

#1 The first available option is created by combining a tilt and turn leaf and two or more leaves that will create an accordion fold when slid to one side. Such construction of the accordion doors allow for opening of the turn leaf, thus providing a passage without the necessity to spread the folded part.

#2 The second available option gives the possibility of sliding all door leaves to one side to get a maximum possible passage opening. Independently of selected opening arrangement, the smallest possible construction of the accordion doors is composed of three leaves, the largest option is six leaves. Additionally, maximal dimensions of the construction are 6000x2500 mm (length x height). The folded parts of the doors move on the guides located in a threshold. To avoid creating barriers in your space we recommend using a low threshold option.

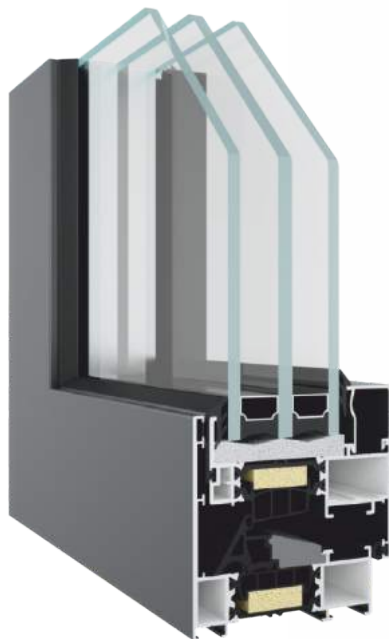






	Maximum dimensions	6000 x 2500 mm
	Number of leaves	from 3 up to 6
	Possible to be made on the basis of the system	TM 74HI
	<b>Colours:</b> Possibility of making a profile with any colour from RAL range. <b>Additional options:</b> anodising, wood imitation, painting with structural paint. <b>Details on page 66-71.</b>	



## WINDOWS WITH THE HIDDEN LEAF

Window with the hidden leaf is a modern solution in which you cannot distinguish the opened window elements from the solid ones. The presented effect is achieved by retracting the window leaf behind the casing profile and placing it on one of the glass pane planes installed both in solid and opened areas.



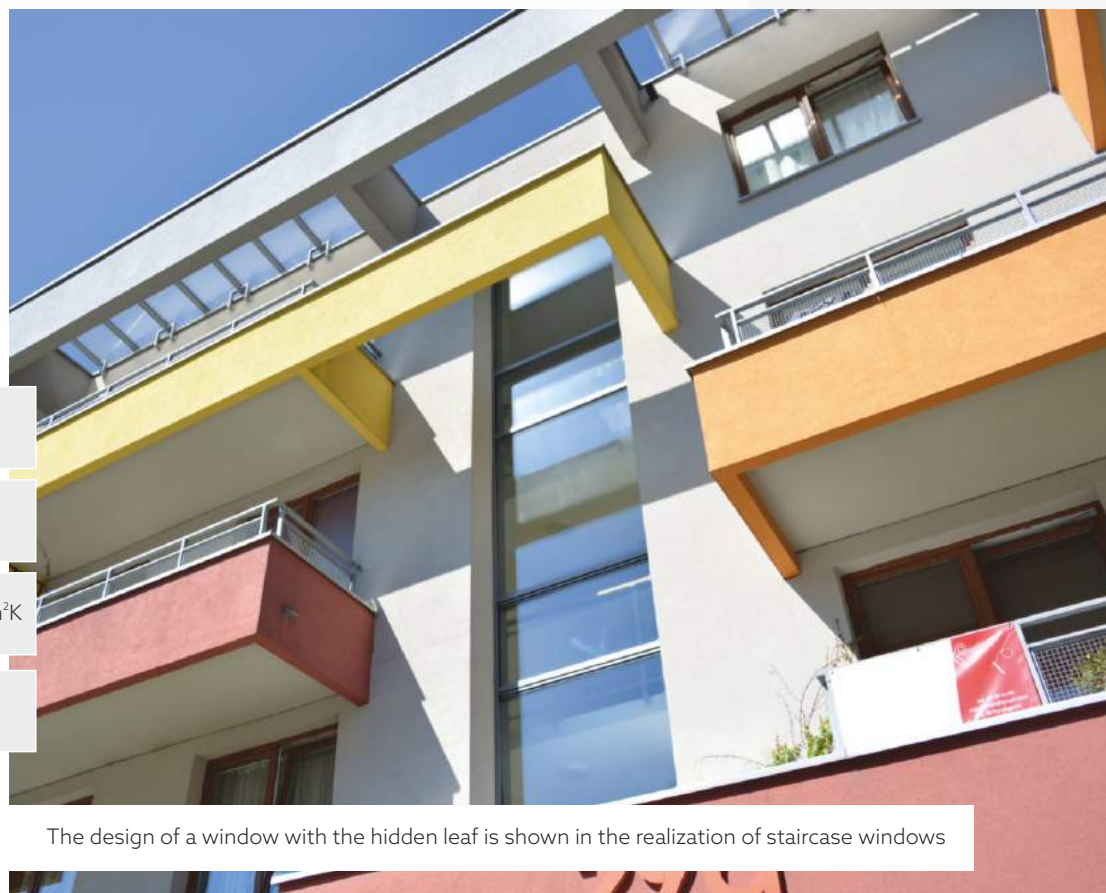
	Permissible leaf width	1600 mm
	Permissible leaf height	2700 mm
	Heat transfer coefficient	from 1,16 up to 1,59 W/m <sup>2</sup> K
	Possible to be made on the basis of the system	TM 77HI, TM 74HI



**Colours:** Possibility of making a profile with any colour from RAL range.

**Additional options:** anodising, wood imitation, painting with structural paint.

Details on page 66-71.



The design of a window with the hidden leaf is shown in the realization of staircase windows



## YAWAL PRESTIGE ALUMINIUM PANEL DOORS

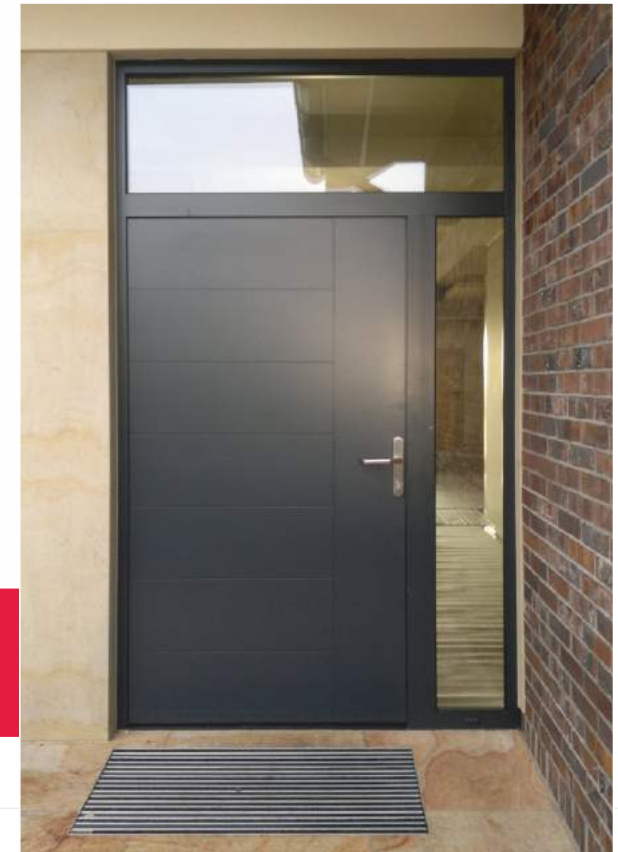
Throughout recent years the role of entrance doors has changed. Obviously, their primary task is still to protect the inside of a house from intruders and cold. Nevertheless, doors now express our homes. They are responsible for the first impression given. This is why it is so important that together with the facade and Windows, they should create an integral whole.

### MODERN TECHNOLOGY

Aluminium panel doors have taken architectural projects by storm. They are renowned for high stability and resistance to deformation, even withstanding the impact of harsh weather conditions.

Prestige Aluminium doors ensure warmth, safety, and comfort for those in the house. Very high levels of thermal insulation ( $U_f$  from  $1,1 \text{ W/m}^2\text{K}$ ), as well as acoustic ( $R_w = 33 \text{ dB}$ ), and water tightness (class 7A) are achieved thanks to the triple-chamber construction of profiles, the application of the most modern thermal spacers, and a string of internal and external seals. Prestige doors have an environmentally-friendly, complex structure. Thanks to this, they keep heat inside during the winter and ensure pleasant coolness during the summer, which lowers the costs of heating or air-conditioning.

Even the very construction of doors offered by Yawal guarantees safety of those in the home. However, there is the possibility of increasing the security level by adding multi-point locks or anti-burglary bolts installed on the side of hinges. If the project includes the installation of glazed elements, these are made of tempered glass.



### FULL AUTOMATION

Intelligent system solutions, which allow remote control and keyless access, are becoming more and more popular. There are numerous options for such improvements, such as: transmitters providing the possibility of opening front doors by remote control, video modules with service panels which are responsible for the monitoring of the situation outside the house, or motion detectors placed in the exit zone. A technical novelty is a biometric access system with a fingerprint scanner, thanks to which we can open the door with the single touch of a finger.

## UNIQUE STYLE

Tailor-made aluminium Prestige doors will accentuate the individual style of each house. Whether you are looking for doors to modern housing or renovated buildings, we can achieve a perfect match thanks to the freedom of choice in form, colour, structure, and equipment.

The number of configurations is practically limitless so it is worth taking some time when selecting suitable combinations of casing frame, leaf frame and infill. Yawal gives its clients the possibility of making door leaves of one plane in line with the casing, in order that the profile of a leaf is hidden from view. Advanced production technology allows the implementation of decorative ornaments, through the use of artistic end mills and various glazings.

Unique character is intensified with a rich range of colours. People who prefer modern styles have a choice of coatings from the RAL range, anodised surfaces, metallic tints or structural effects. On the other hand, those in favour of traditional designs can go for glass panels or a wooden imitation look.



## SUBTLE DETAILS

A classic solution, which beautifully presents itself especially in traditional housing, are outside hinges. Alternatively, the effect of a plain and smooth surface without visible fittings can be achieved through the use of hidden hinges. A third option is roller hinges which can be adjusted to several planes and match the lines of a door's profile. The individual character of an entrance can be highlighted by choosing handles and hand rails matching other elements of the door. Shapes of handles clearly evolve into the simplest forms. Our partners offer hand rails of the following shapes: square, rectangular, oval, and round. They are made of stainless steel, material or cast. Regardless of their shape and the material they are made of, they are durable, adorned in an extraordinary manner, and present supreme quality.

Almost limitless options for adjusting the look of Prestige doors are completed by a broad assortment of hinges, hand rails, locks and handles.

The following part of this catalogue contains exemplary models of door panels ►►





PRESTIGE









## PANEL DOOR SYSTEM - TM 77HI Prestige

TM 77HI Prestige is the highest quality system of entrance doors for single or multi family homes. This solution allows manufacturing leafs within one plane in relation to the casing (invisible leaf profile) or one-sided flush. Thanks to use of a 3-chamber thermal insulation system and innovative thermal spacers, the product is characterised by having excellent properties in terms of handling heat and the elimination of thermal stress caused by differences in temperatures.

This system allows you to lower your energy consumption, resulting in the lower cost of running a household. The panel door system is compatible with the window TM 77HI system which makes it possible to construct various configurations.



	Heat transfer coefficient	from 0,7 W/m²K
	Maximum leaf weight	120 kg
	Permissible leaf width	1300 mm
	Permissible leaf height	2600 mm
	Anti-theft protection	RC2
	<b>Colours:</b> Possibility of making a profile with any colour from RAL range. <b>Additional options:</b> anodising, wood imitation, painting with structural paint. <b>Details on page 66-71.</b>	







**HIGIEJA**

max. panel dimension: 1250x2500 mm.

Two-sided or single-sided panel.

Stainless steel frame around the pane on both sides.

Double-chamber glass pane, matt, P4 safety class.

Possibility of painting in all colours from RAL range, structural colours, and wood-like colours.



**NIKE**

max. panel dimension: 1250x2500 mm.

Two-sided or single-sided panel.

There are end mills on the outside and a smooth panel on the inside.

Possibility of painting in all colours from RAL range, and structural colours.

No possibility of painting in wood-like colours.



**KLIO**

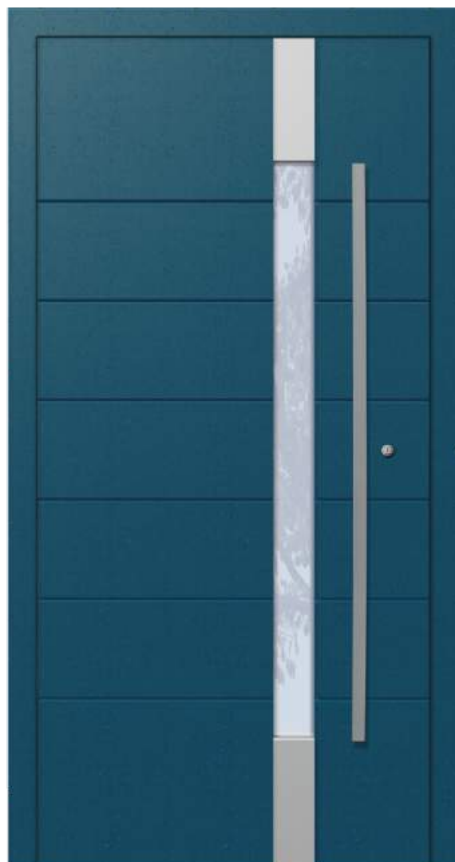
max. panel dimension: 1250x2500 mm.

Two-sided or single-sided panel.

There are stainless steel ornaments affixed to end mills on the outside,

and a smooth panel on the inside.

Possibility of painting in all colours from RAL range, structural colours, and wood-like colours.



#### EUROPA

max. panel dimension: 1250x2500 mm.

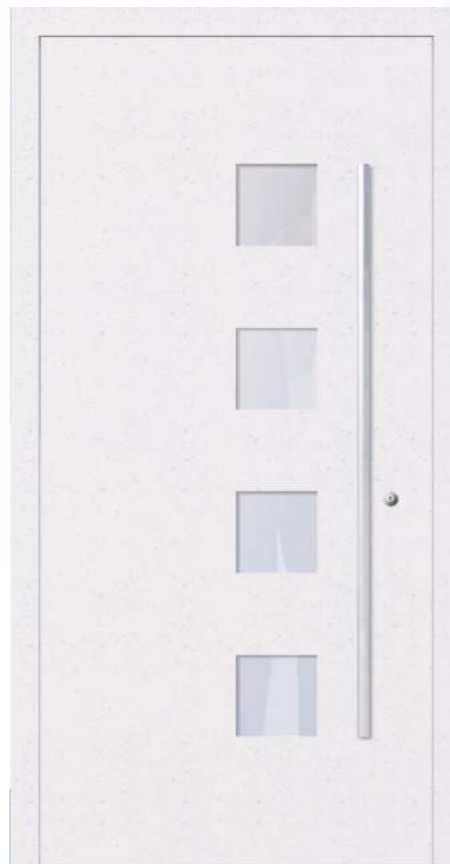
Two-sided or single-sided panel.

Stainless steel frame around the pane on both sides.

Double-chamber glass pane, matt, P4 safety class.

Possibility of painting in all colours from RAL range, and structural colours.

No possibility of painting in wood-like colours.



#### DAFNE

max. panel dimension: 1250x2500 mm.

Two-sided or single-sided panel.

There is a smooth plate on the outside and on the inside.

Double-chamber glass pane, matt, P4 safety class.

Possibility of painting in all colours from RAL range, structural colours, and wood-like colours.



#### TALIA

max. panel dimension: 1250x2500 mm.

Two-sided or single-sided panel.

There are stainless steel ornaments on the outside, and a smooth panel on the inside.

Double-chamber glass pane, matt, P4 safety class.

Possibility of painting in all colours from RAL range, structural colours and wood-like colours.





**PERSEFONA**

max. panel dimension: 1250x2500 mm.

Two-sided or single-sided panel.

Stainless steel frame around the pane on both sides.

Double-chamber glass pane, matt, P4 safety class.

Possibility of painting in all colours from RAL range, structural colours, and wood-like colours.



**KALIOPE**

max. panel dimension: 1250x2500 mm.

Two-sided or single-sided panel.

There are stainless steel ornaments and end mills affixed on the outside, and a smooth panel on the inside.

Double-chamber glass pane, matt, P4 safety class.

Possibility of painting in all colours from RAL range, and structural colours.  
No possibility of painting in wood-like colours.



**EOS**

max. panel dimension: 1250x2500 mm.

Two-sided or single-sided panel.

There is a smooth plate on the outside and on the inside.

Double-chamber glass pane, matt, P4 safety class.

Possibility of painting in all colours from RAL range, structural colours, and wood-like colours.



**TEMIDA**

max. panel dimension: 1250x2500 mm.

Two-sided or single-sided panel.

There is a smooth panel on both sides.

Possibility of painting in all colours from RAL range, structural colours, and wood-like colours.



**HESTIA**

max. dimension: 1250x2500 mm.

Two-sided or single-sided panel.

There are end mills on the outside, and a smooth panel on the inside.

Double-chamber glass pane, matt, P4 safety class.

Possibility of painting in all colours from RAL range, and structural colours.

No possibility of painting in wood-like colours.



**HARMONIA**

max. panel dimension: 1250x2500 mm.

Two-sided or single-sided panel.

There is a smooth plate on the outside and on the inside.

Double-chamber glass pane, matt, P4 safety class.

Possibility of painting in all colours from RAL range, structural colours, and wood-like colours.





**DEMETRE**

max. panel dimension: 1250x2500 mm.

Two-sided or single-sided panel.

There are end mills on the outside and smooth panel on the inside.

Double-chamber glass pane, matt, P4 safety class.

Possibility of painting in all colours from RAL range, and structural colours.

No possibility of painting in wood-like colours.



**MUZA**

max. panel dimension: 1250x2500 mm.

Two-sided or single-sided panel.

There are end mills on the outside and smooth panel on the inside.

Possibility of painting in all colours from RAL range, and structural colours.

No possibility of painting in wood-like colours.



**KORA**

max. panel dimension: 1250x2500 mm.

Two-sided or single-sided panel.

Stainless steel frame around the pane on both sides.

There are end mills on the outside and smooth panel on the inside.

Double-chamber glass pane, matt, P4 safety class.

Possibility of painting in all colours from RAL range, and structural colours. No possibility of painting in wood-like colours.

## GLAZINGS

As a standard, exit doors, sidelights and upper transoms are equipped with glass panes 68 mm thick (transparent, ornamented or matt)

## HINGES

Windows and doors created from Yawal's systems are constructions equipped with hinges from top manufacturers of fittings. Well chosen fittings guarantee safety, the avoidance of breakdowns, and an attractive visual effect.

Depending on the preferred style, the clients may choose from hidden hinges which guarantee a smooth plain surface effect, roller hinges – adjustable in several planes, and classic outside hinges.



## MILLING

Possibility of making panels in accordance with client's individual requirements.  
Scope of milling width: from 10 mm to 60 mm.



Hidden hinge



Outside hinge



Sash roller hinge



## PANEL DOORS LOCKS

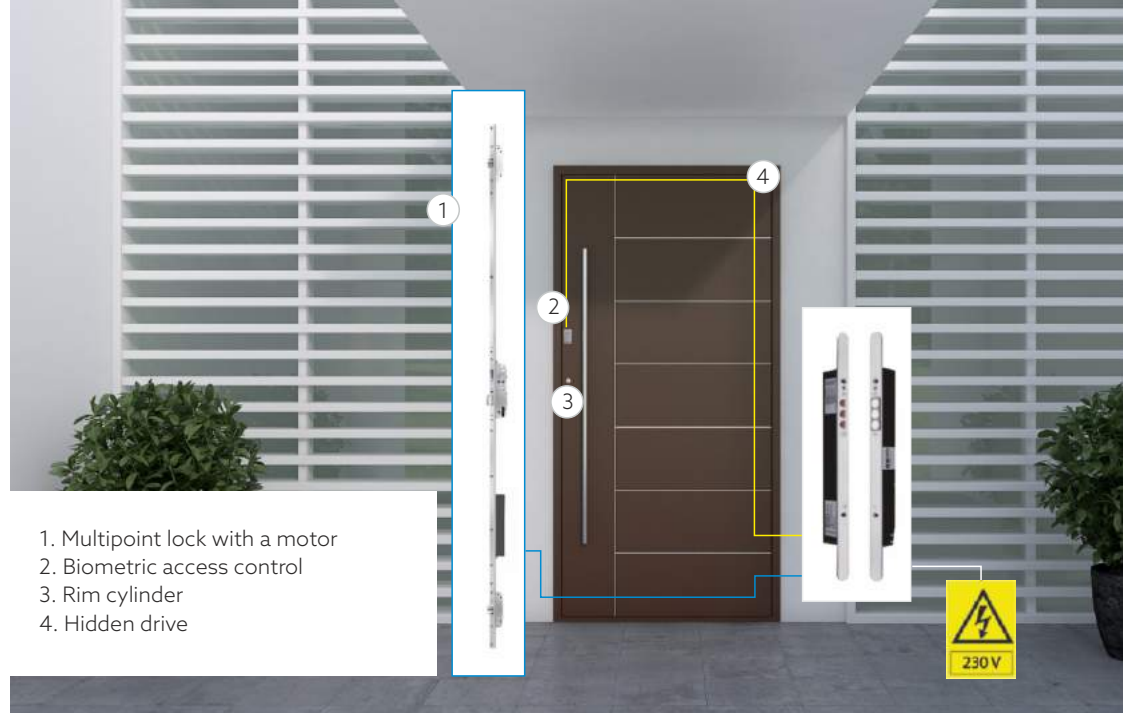
Thanks to the drive system , the doors are opened automatically and closed the same way after entering the house.

The drive is invisibly integrated in the door leaf, runs in low energy mode and operates very quietly.



## BIOMETRIC ACCESS CONTROL

Biometric access control based on fingerprint identification, an RFID reader or introduction of an individual access code allows convenient entrance into the room or building. This solution has been designed so that the end user easily manages to install and configure the device. A fingerprint reader is the ideal solution for single-family houses and institutional facilities. A biometric lock provides access only to authorized people. The device has the ability to be enclosed in the leaf, frame and masonry.



1. Multipoint lock with a motor
2. Biometric access control
3. Rim cylinder
4. Hidden drive

## COMPATIBLE COMPONENTS

The application of a latch and locking bolt provides comfort and safety without having to close the door with a key. In the case of automatic locking locks, there is no need of manual closing.

The grommet transferring electric power and data includes integrated functions of a power adapter, controller, actuator for actuating the lock and electric service box. Durable contact elements eliminate cable connections and thus reduce the opening angle of the leaf.

The concept also includes an innovative rim cylinder in a double-sided key system which meets the highest safety-related requirements by combining individual key profiles with the multiplicity of positions of levers. At any time the existing rim can be supplemented with a mechatronic or electronic solution.







Biometric locks  
to be built in doors



Locks with a code keypad  
to be built on doors

## Biometric locks to be built in doors

A method of operation is simple, the lock memory stores fingerprint patterns of household members who after scanning their fingers on the reader are given the access to the house. Depending on the model, locks may store from several dozen up to several hundred fingerprint patterns. Some lock models are equipped with a "silent alarm" function which may be useful in the case of an intruder who wants to make us unlock the door. This involves the possibility to encode a fingerprint which not only opens the door, but mainly sends a notification about the intrusion to an intervention group.

## Locks with a code keypad to be built on doors

This type of solution allows for unlocking the door with a code. A numeric keypad is installed directly on the door at the height (from 1.2 m) allowing children to operate it. The code keypad is illuminated which helps at night. The solution is weather-proof, including resistance to high temperature or humidity. The keypad is protected with a built-in blocking system which blocks its operation in the case of manipulation attempts.

## RFID is a reader of cards, keychains and other transponders

A special integrated cable driver allows for quick Plug & Play installation. The number of users and transponders is unlimited. It is an extremely comfortable and increasingly popular solution. Keys are not needed to open the doors, but only a small keychain, tag or card, which is received only by the authorized user.

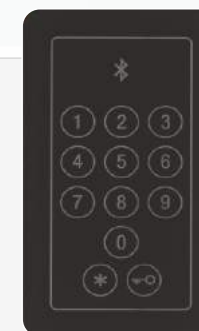
## Bluetooth&Code

Bluetooth&Code is in turn an innovative numeric keypad allowing door opening with a 6-8 digit code and a mobile phone through Bluetooth. The advanced technology excludes the possibility of manipulation, therefore it ensures safety. The system can operate in temperatures between -20°C and +60°C, so it can be also installed outside. Both access control systems are compatible with majority of electromechanical locks and electric strikers. RFID and Bluetooth&Code combine innovative solutions with a stylish design.

Black Bluetooth&Code keypad in a case of glass and stainless steel will look elegant in every interior.



RFID  
to be built in doors



Bluetooth&Code  
to be built in doors

For more demanding users, the door can additionally be equipped with a special control unit which in connection with the managing central unit gives you the ability to control the door from a smartphone or tablet worldwide. For example, a child leaving home to school has not taken his key which definitively prevents him from re-entering the house after his return. In such a situation the kid needs only to call his parent who using their smartphone remotely opens the front door, ensuring the child's safety.

## PANEL DOORS LOCKS

### Electromotive locks

A group of locks successful everywhere where it is necessary to apply a mechanical and electronic solution. They combine two important user features: operating comfort and a high level of anti-theft protections. The solution is utilized in doors with access control. The network offers locks equipped with a catch or roll. You can control locks work both in a mechanical way, and remotely.



### Rigid chain

The door lock prevents it from complete opening. The main task of a rigid chain is to secure from unwanted intrusion into a home.

The chains used in the past could lead to damage to the surface of doors or frame, for example in the case of slamming the chain with the door, the solution of rigid chain eliminates this problem. Small solution dimensions allow for minimal door tilt. Mounting is performed using hidden bolts and screws.



Day and night switch

### Day and night switch

A functional solution that eliminates the need to carry the key with you. An electric striker installed in the lock allows you to set the day mode thanks to which you may enter the house simply by pulling the handle. Switching the switch into the night mode makes entering inside possible only after using the key.

The solution of day and night switch is a modern solution which thanks to its simplicity may be installed at any later moment.



## PANEL DOORS LOCKS

When choosing the entrance doors, in addition to their appearance, we pay attention that they ensure maximum safety and effectively protect against burglary. It is important to know how the doors should be equipped to meet these important requirements.

The level of front door protection depends largely on right locks. Multipoint locks provide very good protection, as they lock doors in several points at the same time. Such a lock consists of a main lock, extra transoms – hook bolts – and elements on the frame, so-called catches, in which they anchor. Hook bolts is the solution for especially demanding users, because it includes two items at the same time. The more such points, the better the pressure. The leaf better adheres to the door frame, improving tightness and door safety.

Hook bolts – combined locking for demanding customers. Doors will not buckle if they are permanently locked in many points at the whole height.

### TRANSOM WITH SIXTEEN LOCKING POINTS

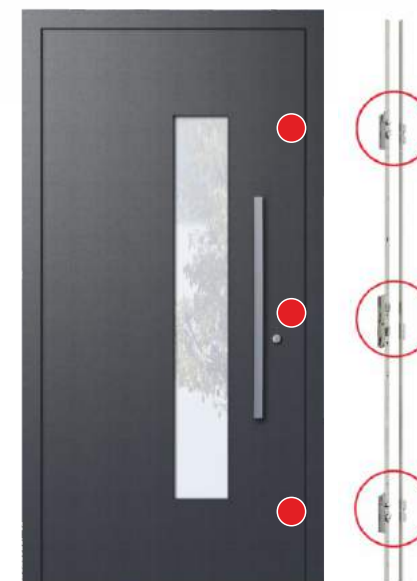
An additional transom in the form of four bolts safely and securely locks the front doors. Doors with a maximum height of 3 meters equipped with extremely solid strip locks with 16 locking points are at the whole height evenly pressed against the door frame owing to which they do not buckle throughout their life span.

#### TRANSOM - ADDITIONAL HOOK BOLT

A solid lock locked in 5 points improves adhering tightness of even slightly buckled doors with the height of up to 3 meters. The main lock transom prevents recessing already after first key rotation. The advantage of the lock is also a quiet latch.



Lock - hook bolts and plates



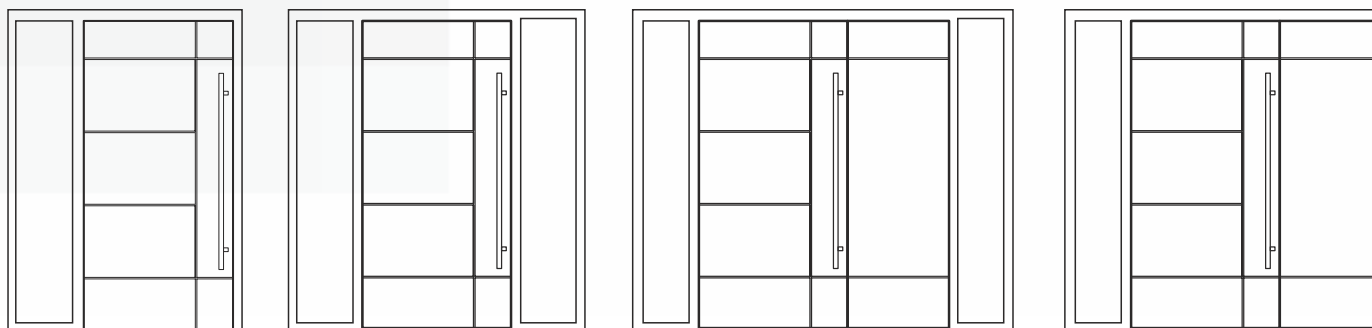
Lock - hook bolts and a strip



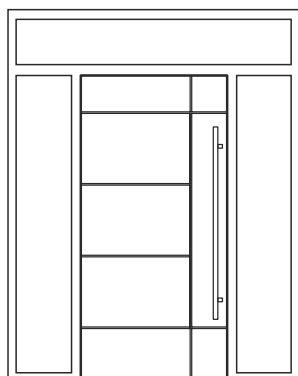
## TRANSOM / SIDELIGHTS

All door patterns (single, double, and extended versions) can be equipped with a single sidelight - right or left, and a upper transom. The drawings below present examples of transoms and sidelights made of taped panels.

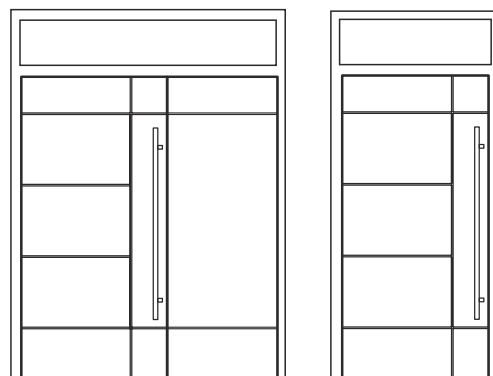
### EXAMPLES OF SIDELIGHTS IN SINGLE AND DOUBLE LEAF DOORS



### EXAMPLE OF TRANSOM AND SIDELIGHTS IN SINGLE LEAF DOORS



### EXAMPLES OF TRANSOMS IN SINGLE AND DOUBLE LEAF DOORS



#### SIDELIGHTS - MAXIMUM DIMENSIONS

External frame dimensions Width		External frame dimensions Height	
for glass	6000 mm	for glass	2600 mm
for panel	1250 mm	for panel	2600 mm

#### UPPER TRANSOMS - MAXIMUM DIMENSIONS

External frame dimensions Width		External frame dimensions Height	
for glass	2600 mm	for glass	1500 mm
for panel	2600 mm	for panel	1250 mm



## DOOR HANDLES - AESTHETICS, QUALITY, FUNCTIONALITY

The final shape and aesthetics of our doors depends primarily on details. By selecting the door handles, we get a chance to create a unique and tailored to our needs entrance, which will delight each of our visitors.

### MODERN STYLE HANDLES



Handles with a plate on oval rosette



Fixed or turning knob

Rosettes

Minimalistic plates and stainless steel pull handles are currently popular. The illustration shows a decorative ring used instead of classic rosettes.

### CLASSIC HANDLES



Knob-handle H3 - long plate

Handle H1 - long plate

Handle H2 - long plate

Knob-handle H2 - short plate

Handle H1 - short plate

Handle H2 - short plate

### Optional accessories

To ensure safety and comfort of the family is the primary goal of each of us. We present to you an offer of optional accessories dedicated for aluminum doors which includes, among other things, security products against the entry of intruders or, in the case of accidental setting fire.



WST floor restrictor

Provides proper leaf cushioning while opening and eliminates the issue of occurring door cavities and damages.



WBP fire bolt

Protects the door leaf from deflecting and deformation during a fire which may be a result of high temperature.



WBA anti-theft bolt

Anti-theft protection mounted from the side of hinges on the door leaf and frame.

## DOOR PULL HANDLES - AESTHETICS, QUALITY, FUNCTIONALITY

Brackets perfectly fit modern and classic door design. All doors are fitted with an internal door handle (in a coating simulating inox steel) and an outer pull handle made of stainless steel as standard.

We enable creation of one's own equipment composition. Stainless steel pull handles are available in different shapes: bent or straight and in different spacing. Additional handle patterns are available upon request.

### POCKET PULL HANDLE



An alternative to traditional door handles are elegant and minimalist pocket handles mounted in aluminum panel doors. Depending on the requirements of private investors they come in different colors and shapes. There is also a possibility of installing feature lighting.



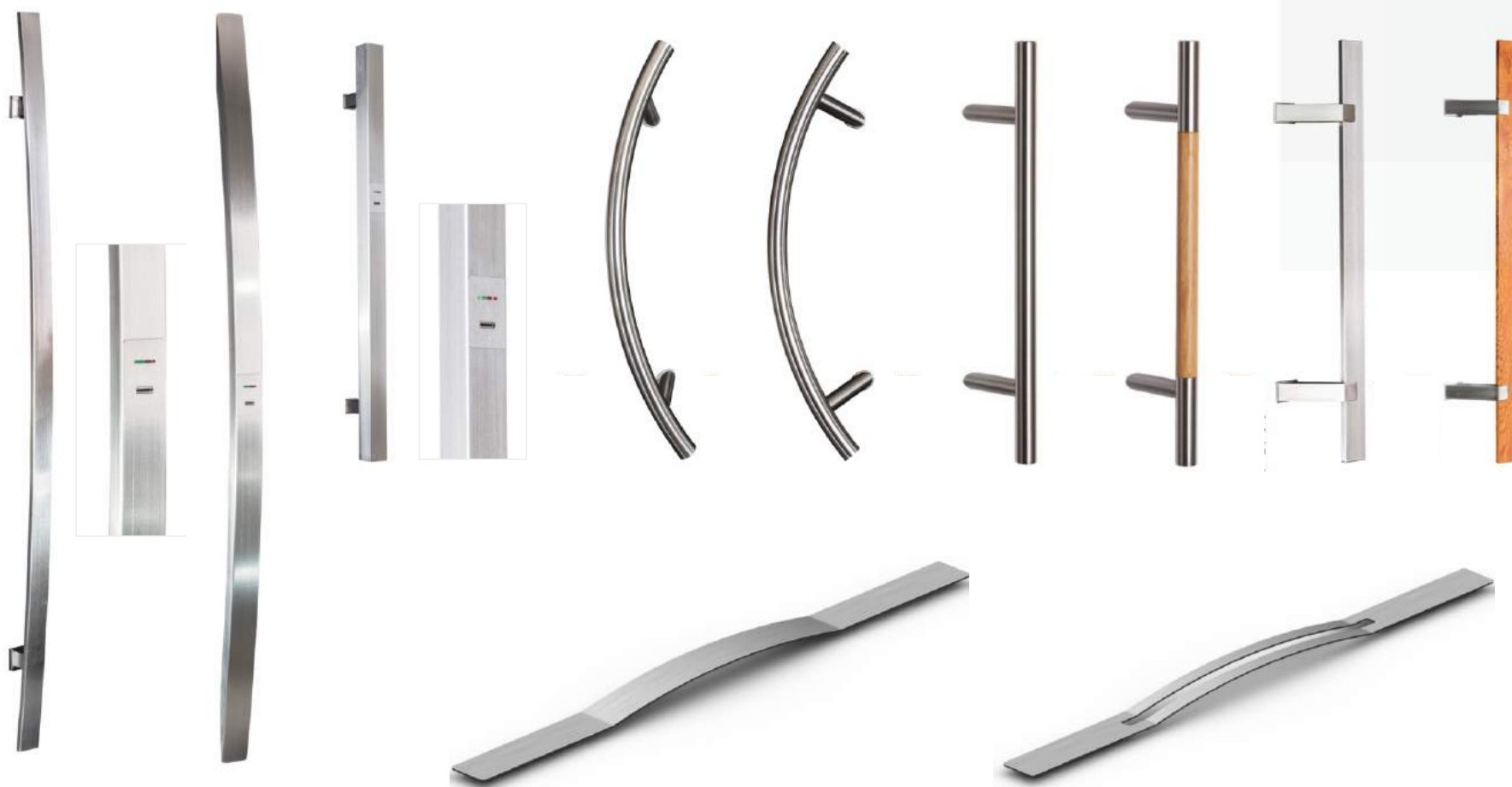
The length of a hand rail is adjusted to individual needs of a client.  
Min. length - 40 cm, max. - 200 cm,  
difference in length - every 10 cm





**DOOR PULL HANDLES - AESTHETICS, QUALITY, FUNCTIONALITY**

The handles presented below represent only part of models available in our offer. A complete range of pull handles together with an offer from the scope of opening and closing automation is available in the Points of Sale.



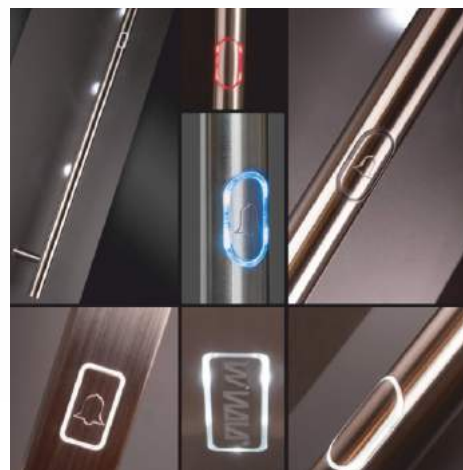
## DOOR PULL HANDLES - AESTHETICS, QUALITY, FUNCTIONALITY

The concept of smart home includes not only solutions for ventilation, lighting or air conditioning, but also those that help us opening and closing doors and windows. The company offers a wide range of handles with integrated intelligent access systems.



Biometric handle with EKEY fingerprint reader

EKEY reader is dedicated to individual customers. It works ideally for single-family houses and small settlements. The memory of the reader allows you to store up to 99 fingerprints. For safety, it is recommended to add left and right hand finger to the system.



Handle with a touch sensor

This is an extremely comfortable solution allowing for easy door opening by touching the pull handle. After the doors are manually closed or closed using the automatic closer, they are locked again.



Biometric handle with IDENCOM fingerprint reader

A system resistant to manipulation, presents the highest degree of recognition even in the case of varying hand sizes in children or finger injuries.. Leaves no fingerprints. Reader operation is extremely simple. The sensor is integrated into the handle.



Handle with a numeric keypad

The numeric keypad is compatible with electromechanical locks and electric strikers. The solution has a locking mechanism, usually occurring at ATMs, through which the keypad is resistant to manipulation. However, an authorized person can easily unlock the mechanism.

## THE LATEST GENERATION OF FRONT DOOR FIXINGS

By selecting the door to our dream home, we need to reflect on many important issues related to their structure. One of the basic decisions we have to make concerns the choice of door hinges.



### Surface hinge

Surface hinges guarantee easy installation and adjustment in three planes without removing the leaf. You may select from two- or three-part hinge versions. Their structure and rich pattern-design make the surface hinges are characterized by not only durability, but also aesthetic appearance.

### Roller hinge

Its style refers to the latest architectural trends. This allows for easy and independent adjustment in three axes. The range of adjustment includes: height, aperture and seal pressure. An ideal solution for individual and showcase enclosure.



Surface hinges - asymmetrical



### Bumpers

Protection of doors infill from accidental damage resulting from e.g. a bike or trolley impact



## THE GARDEN STARTS AT HOME TERRACE DOORS

Large glazings are no longer a hallmark of modern housing. Terraces and balconies which are natural elongations of living space are becoming more and more frequent in designs for single family homes. When striving for an accurate finish for such spaces, it is worth choosing aluminium terrace doors.

Glazed walls will add an elegant look to the interior by optically enhancing the size of rooms and opening up the house to the beauty of external surroundings. Terrace exits have to be well-designed and placed accordingly in relation to the cardinal directions of a compass. This will increase the entry of natural light and ensure optimum arrangement of space. Terrace doors do not need as much space as their leafs, which when open, slide open sideways parallel to one another.



Apart from aesthetic aspects, the technical parameters of designed solutions play a significant role and Yawal pays utmost attention to this element. In order to do their job for a whole year without causing energy loss, terrace doors have to present the right level of thermal and acoustic insulation, wind load resistance, and water tightness. Yawal constructs partitions which meet requirements set for passive houses, ensuring a heat transfer coefficient  $U_f$  from  $0.8 \text{ W/m}^2\text{K}$  (DP 180).

Occasionally, people interested in this solution have certain doubts. Will large-format glazings put the safety of my family at risk? Absolutely not! Anti-theft protection is enhanced by: the material stability of aluminium profiles, firm fitting systems, and glass panes of the highest anti-theft classes available.

## UNIQUE SOLUTIONS

Yawal terrace door systems allow for making unique and functional constructions adjusted to clients' needs. Due to the type of fittings used, doors are divided into categories:

- lift-slide,
- tilt-slide,
- tilt-turn, including low threshold solution,
- folded.

The highest class fittings make opening very easy and noiseless - perfect for people who value comfort. The border between the world inside a house and its external surroundings disappears with the single movement of hand. The interesting solution of a hidden external threshold helps the elderly, disabled people, and children.



For those who admire limitless space as an extraordinary addition to the structure of a building, Yawal's specialists have designed corner mullion-free Windows, which allow amazing panoramic glazings.

The colours of terrace doors along with their facade and interior design enhance the individual character of a house. Just as with other aluminium products, the choice is basically limitless: from varnished surfaces, alongside anodised and metallic ones, to structural effects.









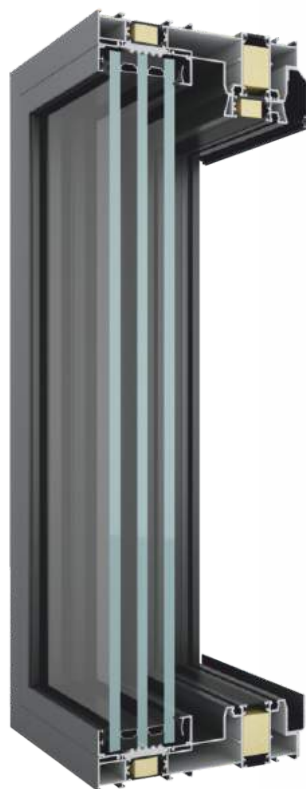
## TERRACE DOORS (LIFT-SLIDE) - DP 180

DP 180 is a system used for manufacturing lift-slide windows and doors for outside housing. It is a modern solution based on aluminium profiles and thermal spacers. The construction of the DP 180 system contributes to the reduction of heat loss which lowers the utility costs of use of designed buildings.

The construction can be used in family housing and public facilities.



POSSIBILITY OF MANUFACTURING ANTI-THEFT DOORS AND AUTOMATICALLY CONTROLLED DOORS



Heat transfer coefficient

from 0,8 W/m<sup>2</sup>K



Maximum leaf weight

440 kg



Permissible leaf width

3300 mm



Permissible leaf height

3300 mm



**Colours:** Possibility of making a profile with any colour from RAL range.

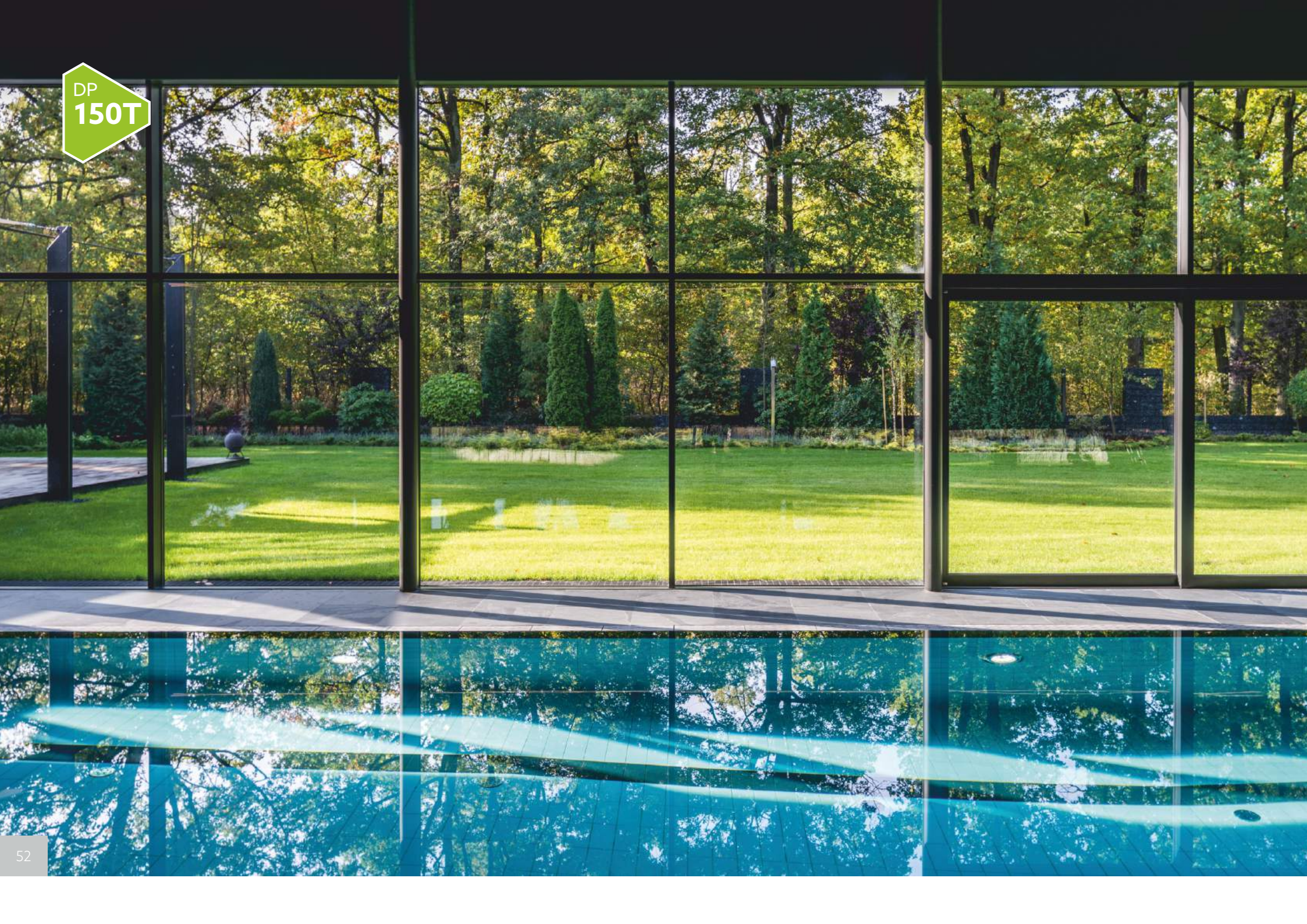
**Additional options:** anodising, wood imitation, painting with structural paint.

Details on page 66-71.





DP  
150T



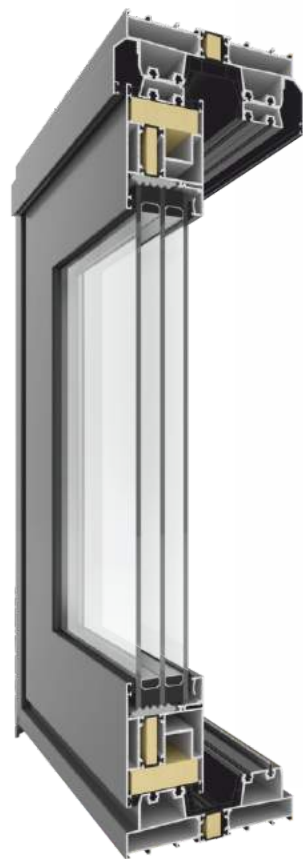





## TERRACE DOORS (LIFT-SLIDE) - DP 150T

The DP 150T system allows for the construction of lift-slide doors. Aluminium profiles for this system were designed in a way that enables high parameters of thermal insulation. The DP 150T system makes it possible to create constructions with a max. height of 3300 mm and max. weight of 400 kg. Lift-slide fittings ensure comfort and ease of use even with large and heavy leaves. Doors of this type are used as external partitions, terrace exits, and doors in conservatories.



POSSIBILITY OF MAKING ANTI-THEFT DOORS AND AUTOMATICALLY CONTROLLED DOORS



	Heat transfer coefficient	from 0,9 W/m <sup>2</sup> K
	Maximum leaf weight	440 kg
	Permissible leaf width	3300 mm
	Permissible leaf height	3300 mm
	<b>Colours:</b> Possibility of making a profile with any colour from RAL range. <b>Additional options:</b> anodising, wood imitation, painting with structural paint. <b>Details on page 66-71.</b>	







## FITTINGS FOR OVERHEAD SLIDING DOOR

Flexible overhead sliding system for custom made solutions lifts and slides accurately both, standard elements and large - dimensioned elements that weigh as much as 330 kg (or even 440 kg in tandem option).

THE ADVANTAGE OF THIS PARTICULAR SOLUTION IS EXTREMELY QUIET OPERATION THAT GUARANTEEING USERS CONVENIENCE AND COMFORT.

The fittings allow for uninterrupted view and great perspective. Due to exceptional load capacity - even 13 meters width, this system provides a wide opening of over 6,5 meters thus eliminating the problem of interfering with the view of fixed posts in the passage



For many years of comfort operation.

Carriages of this system are protected against corrosion and equipped with cleaning brushes. As a result, the guideway is automatically cleaned during the sliding movement. The rollers are protected against dirt and long-term damages. During opening and closing the overhead -- sliding fitting uses lever force in espagnolettes and carriages in an optimal way.

The system of fittings for terrace doors allows for the application of technologically advanced solutions, such as electric overhead sliding drive.

Should you need further information about smart automatic solutions, please enquire at our distributors.



## FITTINGS FOR OVERHEAD SLIDING DOOR

### Automatic system for closing terrace doors

This solution is perfect for admirers of comfort and precision. It will work even in case of large terrace doors, overhead sliding and sliding, that weigh up to 300 kg. To lock the terrace doors accurately and precisely it is enough to slightly push the leaf. The leaf slows down gently and lightly at one palm width from the locking edge and is automatically pulled to closed position.

The system is characterised by fine-lined construction. It is possible to install easily additional elements as needed.

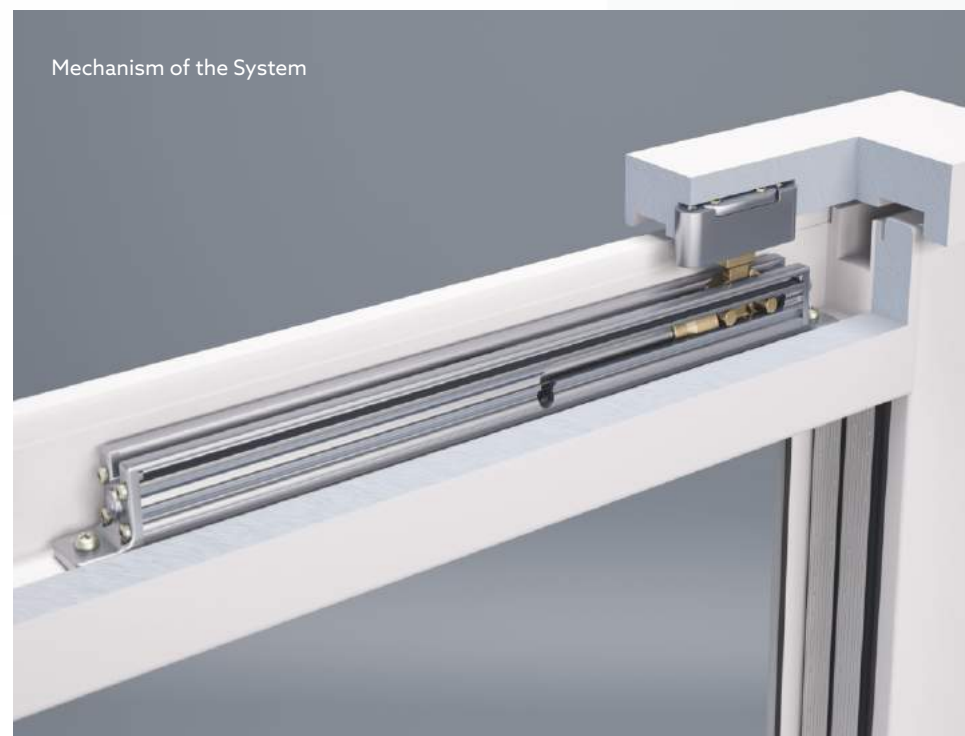
## HANDLES FOR OVERHEAD SLIDING TERRACE DOORS



Exemplary color versions

Example of a handle with a pull handle

### Mechanism of the System

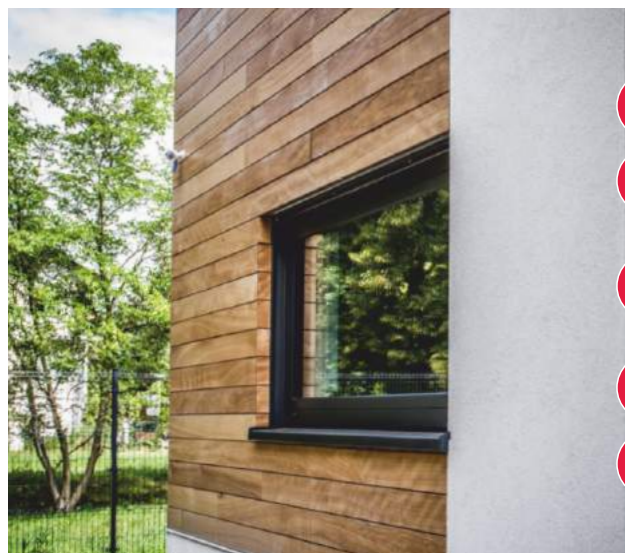


## ATTENTION TO DETAIL SOFTLINE WINDOWSILLS

The installation of windows is not the end of our work. It is also necessary to install external windowsills which protect the house's facade from sags and damp. Softline aluminium windowsills can serve as a Smart and light solution to this problem. Their rounded shape provides an optimum water outlet from the facade's plane and makes it impossible for dirt to accumulate.

Aluminium alloys, which windowsills are made of, allow for the use of various structures, colours and painting effects e.g. resembling wood, thanks to which the look of an element can be matched with every architectural style, building's facade, window or external surrounding. Windowsills are additionally covered with a polyethylene film which protects the decorative surface from damage. Depending on users' needs, there is freedom of selection of the sill's width.

Softline aluminium windowsills are stiff and resistant to corrosion. They can be easily cleaned. This solution is completed with finishing elements and the shapes of fastening parts fitted to each type of window, made of material, wood or aluminium so it does not cover water outlets. The ends of windowsills can be made from plastic or prefabricated aluminium.



To avoid loss of energy we recommend a solution of warm windowsills - see an installation example on page 64.

	Thickness	from 1 up to 1,8 mm
	Length	1000 – 6000 mm
	Width	150 mm; 175 mm; 200 mm; 225 mm; 250 mm; 275 mm; 300 mm; 325 mm; 350 mm
	Ending	plastic/aluminium
	<b>Colours:</b> Possibility of making a profile with any colour from RAL range. <b>Additional options:</b> anodising, wood imitation, painting with structural paint. <b>Details on page 66-71.</b>	







## EVERLASTING ELEGANCE YAWAL ECLIPSE ALUMINIUM SHUTTERS

Shutters can add a beautiful and functional finish to any window. Chosen to match the facade and Windows, they will highlight the individual style of any home.

External window shutters increase comfort by regulating air circulation, sun exposure, and temperature inside the rooms and by limiting the amount of noise which reaches the house. They also protect windows from harsh weather conditions and make it difficult for intruders to break into the house.

Aluminium shutters can last many years, are easy to clean, and there is no need for regular maintenance. They are an alternative to more expensive wooden shutters which are available on the market. Stiff and at the same time slender frame profiles make Yawal Eclipse shutters suitable for windows, terraces and balcony doors.

Yawal engineers have designed two types of shutters:

- with fixed fins allowing access of light at a certain angle,
- panel shutters, which upon closure achieve absolute darkness.

A rich offer of hinges and fittings allows the installation of shutters to window frames and to the wall. Closed shutters may constitute one plane with a facade, stand out, or be placed in a window cavity.



Maximum dimensions of 1 leaf

900x2400 mm



Installation method with fixed fins

to frame, to wall



Installation method of a panel shutter

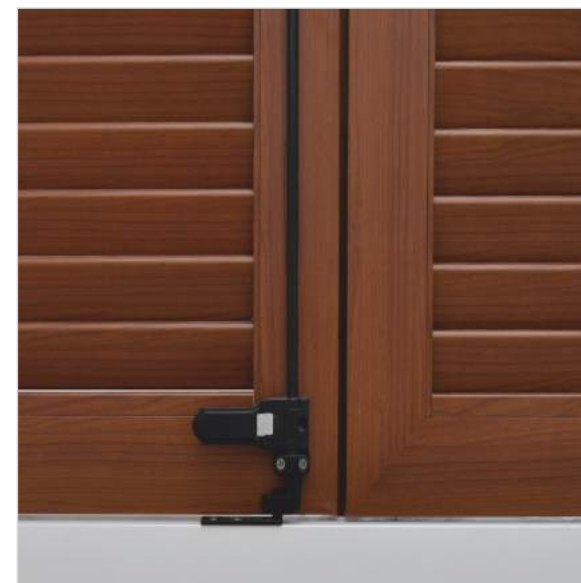
to the wall



**Colours:** Possibility of making a profile with any colour from RAL range.

**Additional options:** anodising, wood imitation, painting with structural paint.

Details on page 66-71.



## TAKING CARE OF YOUR COMFORT YAWAL SUN PROTECTION

Blinds system perfectly matches the current trends prevailing on the market in terms of functionality and architectural style.

A protection based on Yawal Sun Protection system, that has been properly fixed, allows for protecting the interior against weather conditions. It increases the comfort of residents by reflecting and dispersing the light entering the building. This solution is also economically attractive - shaded interior may decrease the costs of air conditioning.

Yawal chain offers two types of blinds to the customers:

- #1 fixed - available in two shapes: elliptic (lens-shaped) or "z" shaped,
- #2 movable - available in elliptic shape. Yawal Sun Control folded blinds are a variation of movable blinds.



	Shape of protection - fixed brise soleils	elliptic / rectangular
	Shape of protection - movable brise soleils	elliptic
	Shape of protection - blinds	Z-shaped
	Protection dimensions fixed brise soleils	100 mm, 150 mm, 200 mm, 240 mm, 300 mm
	Protection dimensions movable brise soleils	100 mm, 150 mm, 200 mm, 240 mm, 300 mm
	Protection dimensions blinds	50 mm, 60 mm, 66 mm, 76 mm, 80 mm, 86 mm
	<b>Colours:</b> Possibility of making a profile with any colour from RAL range. <b>Additional options:</b> anodising, wood imitation, painting with structural paint. <b>Details on page 66-71.</b>	





## BA 50 ALL GLASS BALUSTRADE

Whenever it is necessary to protect people against falling out of balconies or terraces, we recommend using a balustrade. Current architectural trends enhance larger and larger glazing and this trend is also reflected in balustrades designed for terraces located on higher floors of the buildings.

Yawal offers an all-glass balustrade to private investors. The balustrade is constructed on the basis of the Yawal BA 50 system and it protects the users against falling without limiting the contact with the environment. The balustrades can be installed at any preferred angle, depending on the type of building development. The solution offered by the Yawal meets the current architectural trends due to endless possibilities of colour selection and using freely transparent and non-transparent glazing in system solution of aluminium profiles. The construction and the method of anchoring of the balustrade make this solution easy to adapt to existing constructions of balconies or terraces.



Possible installation of photovoltaic cells



**Colours:** Possibility of making a profile with any colour from RAL range.

**Additional options:** anodising, wood imitation, painting with structural paint.

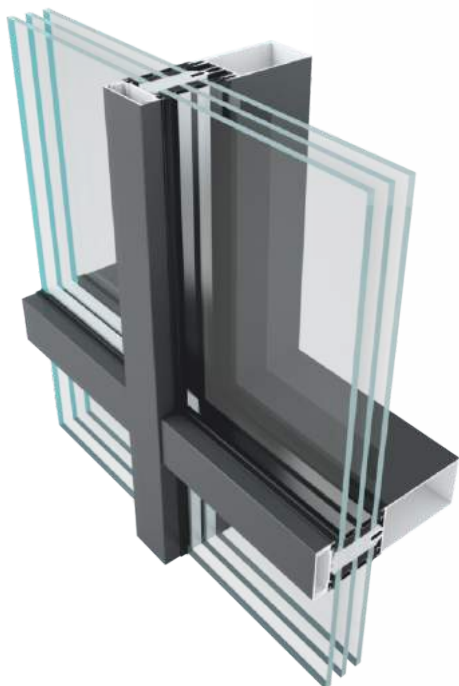
Details on page 66-71.











## MODERN DESIGN TREND GLASS FACADES IN HOUSES

Modern architectural style and new technologies which allow the attainment of a high level of thermal insulation, water tightness, wind load resistance, and anti-theft protection have led to an increasing number of designs of single family houses including glass facades.

The effect of a glass wall can be obtained in numerous ways e.g. by using glazed fixed elements or combining them with large terrace doors or slide windows. Glass facades open up the view to the beauty of the landscape and wonderfully brighten the interior. Thanks to its technologically advanced construction designed by Yawal's experts and applied components, it prevents the over-heating of rooms in the summer and their loss of heat during the winter. Glass facades give lightness to the structure of a building and affect its visual attractiveness. Through the use of Yawal's innovative constructions, it is impossible to distinguish fixed elements from opening ones when outside.

Possibility of installation of opening elements from all systems included in the catalogue.

	Heat transfer coefficient	from 0,7 W/m²K
	Maximum module weight	600 kg
	Maximum module dimensions	6000x4000 mm
	Anti-theft protection	up to RC4

**Colours:** Possibility of making a profile with any colour from RAL range.  
**Additional options:** anodising, wood imitation, painting with structural paint.  
 Details on page 66-71.



### POSSIBLE APPLICATION OF PHOTOVOLTAIC SOLUTIONS



One of the options is a facade without visible profiles (SL solution)



WINTER  
CONSERVATORIES

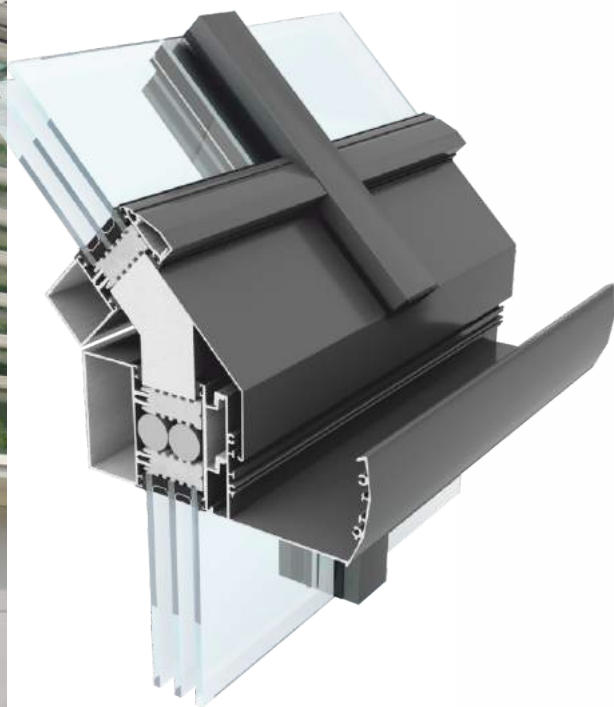




## CLOSER TO NATURE ALL YEAR ROUND CONSERVATORY

Lush greenery, golden leaves, and fairy-tale white surround our family in a relaxing atmosphere. This is the effect that can be achieved by including space for a conservatory in a house project, or by adding it to the structure of an already existing building. An orangery will not only make our house more beautiful by allowing us to admire nature the whole year round, but is also valuable for economic reasons, such as improving the energy balance of a house, and increasing the property's value, thanks to expanding its usable surface. When counting the advantages of this type of solution, we cannot fail to mention the increased access of sunlight to rooms.

Our company's offer does not include schematic, ready-made conservatories. Each project is an individually designed construction, which accommodates for the needs and requirements of our clients. In order to be able to use the conservatory the whole year round, we include aluminium profiles with thermal insulators which enable a high level of thermal insulation. The use of aluminium, which is characterised by its material stability, in the construction of conservatories, and properly chosen glass panes, ensures a high level of anti-theft protection.



Possibility of installation of opening elements from all systems included in the catalogue.

	Heat transfer coefficient	from 0,7 W/m <sup>2</sup> K
	Maximum module weight	600 kg
	Maximum module dimensions	6000x4000 mm
	Anti-theft protection	up to RC4

**Colours:** Possibility of making a profile with any colour from RAL range.

**Additional options:** anodising, wood imitation, painting with structural paint.

Details on page 66-71.



## OPT FOR WARM FITTING!

Selection of energy-efficient aluminium windows is just the beginning of our way!

Now the purchased products must be properly fitted to do the work and help us in saving on heating and air-conditioning costs. Correct fitting counteracts against moistness of insulation and construction materials.

### Not tight, badly fitted joinery generates:



**from 15%**

of heat loss in single-family houses



**up to 25%**

of heat loss  
in apartment buildings



**up to 45%**

of heat loss  
in apartment buildings



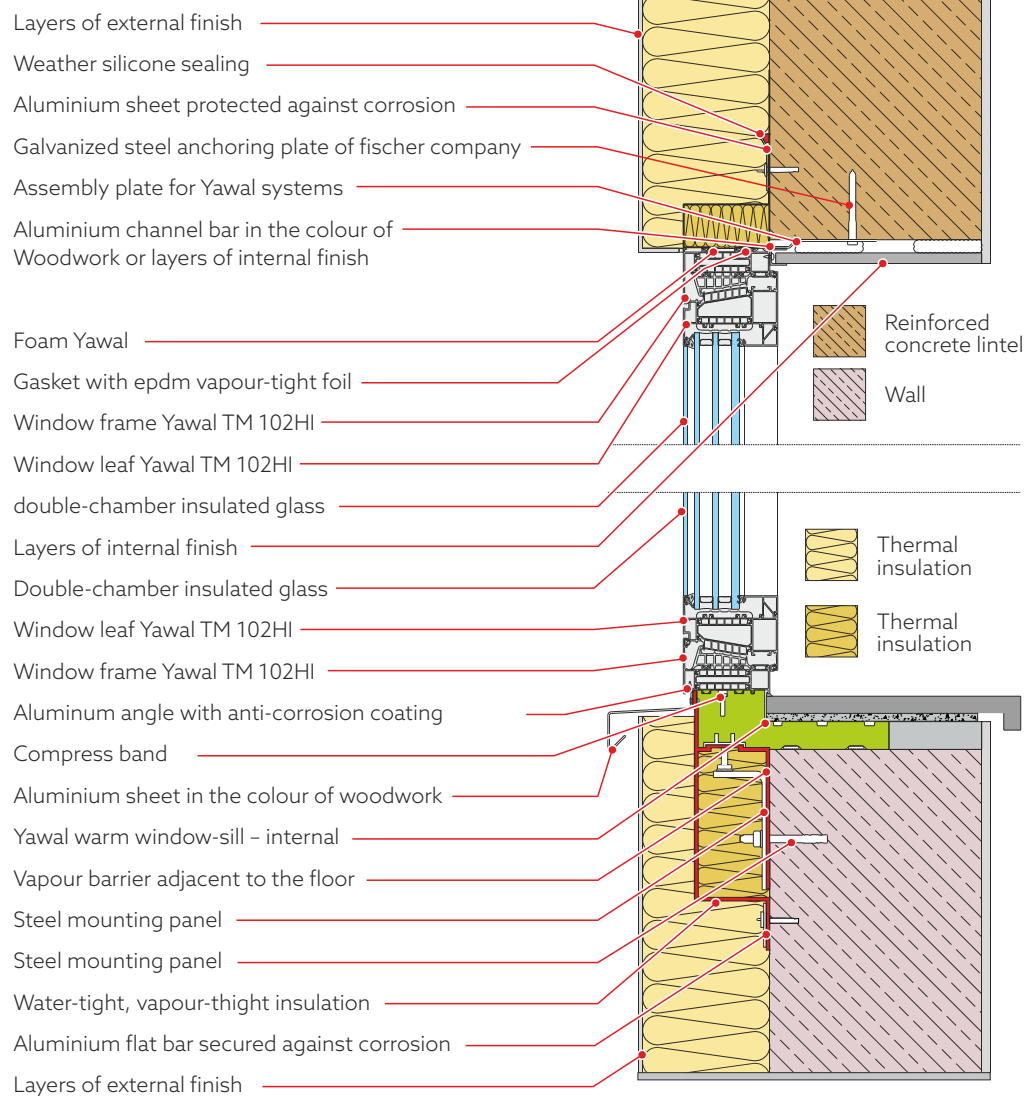
**Even 60% of complaints regarding**  
windows and doors relates  
to installation defects

The presented data were collected during the educational campaign Good Installation

The greatest disadvantage of traditional fitting method of windows and doors is creating thermal bridges that cause thermal losses and moisture hazard where the window touches the wall. To eliminate those serious problems it's worth to go for a layered fitting technique.

### DIAGRAM OF WARM ASSEMBLY

ON THE EXAMPLE OF WINDOW BASED ON TM 102HI





## OPT FOR WARM FITTING!

The crux of warm fitting is setting the window not directly into the wall, but into a layer of insulation.

This technique is used in case of two- or three-layer wall. With layer fitting it is crucial to build an appropriate scaffolding structure that will support our window. Such a structure is composed of metal elements screwed to the wall at the base of window opening, the so called main supports or heavy load consoles and side supports.

The type of anchors and the method of assembly are specified in the designing documentation containing fitting plan with regard to the weight of the window, the material of the wall and the distance of protrusion of the window from the wall.

The distance between supports and corners and supports and mullions should be app. 15 cm. The maximal allowable distance between anchors is 70 cm.



The heavy load consoles are mounted inside the window opening or on the face of the wall, and the side supports are located at the top and on the sides of the window opening. The heavy load consoles are connected with the window profile by means of special screws.

The technique of warm fitting uses three layers of insulation. A foil or tape with water vapour permeability properties that allows for diffusion of water vapour but protects against adverse effects of precipitation.

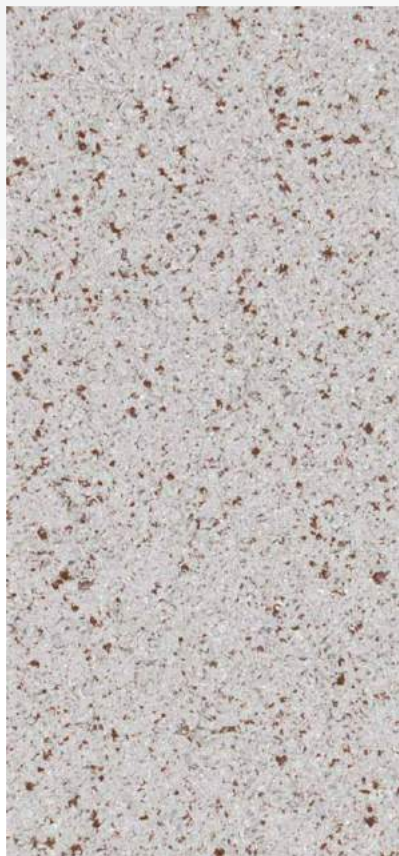
The middle layer functions as thermal insulation and is made of polyurethane foam. The internal layer is made of vapour-tight tape or foil to protect the layer of thermal insulation from humidity permeating from the inside of the house.

**Remember! The contact point between the window and the wall is a neuralgic point exposed to serious defects causing that even the highest class windows will not meet our expectations unless we choose a proper manner of installation.**

## IGP-LivingSurfaces THREE FORMS OF NATURE

LivingSurfaces product series is a reaction of IGP company to the trend of "living" surfaces.

Living surfaces are surfaces consciously heterogeneous in terms of distribution of pigment or effect. While various semi-finished products must meet strict tolerances in terms of material and technical and color constancy, major multi-ingredient combination of powder paints with characteristic effects may show individual and optically visible variances of individual production batches to the likeness of quarried blocks from the same quarry.



IGP- LivingSurfaces Hazelnut



### Spotted effect

Clear and homogeneous in terms of color surfaces are rare in the nature and exist only in uniformly defined chemical structures. We are far more interested in the surfaces of biogenic or inorganic substances in which individual colored particles depending on the surface and distance from the object determine physiological color synthesis and their overall impression.

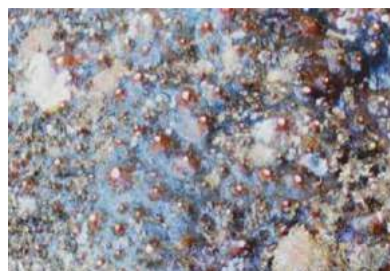
Coarse-crystalline plutons such as granite often show the spotted effect in different variations.



### Corrugated structure

Corrugated structures of sand dunes, river deltas or biofilm patterns are created in accordance with the rule of self-organization. They are a result of water or air currents flowing over the sticky layers which under the influence of changing severity form patterns similar to waves on the surface. The top layer of such a structure can by waving its cells greatly enlarge the surface area and in this way optimize the exchange of temperature and gases with the environment.

Similar to waves, sand patterns are the perfect example of wavy structures formed under the influence of the wind.



### Granular structure

Porous mixtures of mineral and organic structures with a knotty nature, such as e.g. beetle armor scatter light rays. Light dispersion suppresses shine and allows you to blur the outlines. The surface seems to be more massive and heavier. Powder coating materials with specific grain size curve give rise to varied and vibrant textures.

This magnified sea spider is an example showing that granular structures exist in the nature in various forms.



## IGP-LivingSurfaces THREE FORMS OF NATURE

### SPOTTED EFFECT

A sensuous and easy-to-clean microstructure. The base color is supplemented by adding finely distributed contrasting and/or effect-imposing components.



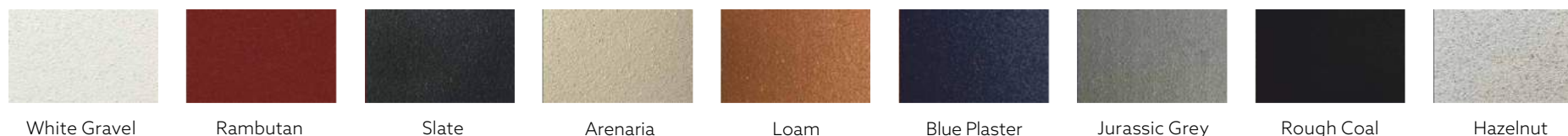
### CORRUGATED STRUCTURE

Satin surfaces with flatly floating faults. Monochrome variants are granted an agitated surface effect under the influence of play of light and shadow.



### GRANULAR STRUCTURE

Specific grain size curves allow for raising deeply mat structures similar to three coat plaster. Lacquered objects appear massive and mineral.



The colours presented above are for reference only, for the full colour range please ask our Sales Representatives.



## WOOD-LIKE COLOURS



916/1501 - MAPLE



916/1402 - BRIGHT OAK



916/2103 - PINE



916/2901 - IVORY



916/1406 - BIRCH-TREE



451/2103 - PINE



451/1406 - CHERRY



451/1403 - CHERRY



451/1402 - CHERRY



451/1401 - CHERRY



451/1704 - MAHOGANY



682/2901 - IVORY



716/1401 - CHERRY



716/1402 - CHERRY



716/1501 - KNOT-FREE PINE



716/2103 - PINE

The colours presented above are for reference only, for the full colour range please ask our Sales Representatives.



**WOOD-LIKE COLOURS**



725/1403 - DOUGLAS FIR



733/1401 - CHERRY



733/1402 - CHERRY



733/1403 - DARK CHERRY



733/1829 - WALNUT



739/1406 - CHERRY



739/2301 - GOLDEN OAK



742/1406 - CHERRY



742/1704 - MAHOGANY



746/1829 - WINCHESTER



775/1403 - CHERRY



775/2301 - WALNUT



797/2305 - OAK



775/2516 - BOK OAK



451/2805 - ZEBRANO

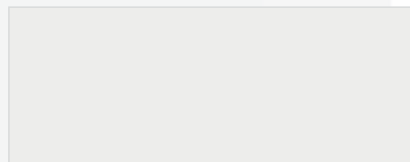


451/2901 - IVORY

The colours presented above are for reference only, for the full colour range please ask our Sales Representatives.

## ANODISING

The anodising process applied on the aluminium profiles increases their resistance to corrosion and mechanical damages. The surfaces subjected to anodising acquire characteristic texture and due to addition of colouring substances a durable, indelible coloured coating is created.



C-0 E2



C-0 E2T



C-31 ES



C-32J ES



C-32C ES



C-33J ES



C-33C ES



C-34J ES



C-34C ES



C-35 ES

The company performs anodizing of aluminum profiles under strict technological supervision according to the Qualanod requirements in order to guarantee the quality of produced anodic coatings. The quality of anodic coatings is confirmed with QUALANOD quality mark, Certificate No. 1802.

The colours presented above are for reference only, for the full colour range please ask our Sales Representatives.



## POWDER LACQUERS

All products based on Yawal systems can be performed in any RAL colors, in mat and satin. Below are examples of standard colors. Other colors (including structural, metallic, pearl or concrete-effect finishes) are found in the chart.

				
RAL 1013	RAL 1019	RAL 3004	RAL 3005	RAL 5003
				
RAL 5014	RAL 6005	RAL 7011	RAL 7012	RAL 7016
				
RAL 7021	RAL 7024	RAL 7035	RAL 7039	RAL 7043
				
RAL 8019	RAL 8028	RAL 9005	RAL 9006	RAL 9007
				
RAL 9003	RAL 9010	RAL 9018	RAL 9022	RAL 9023

The colours presented above are for reference only, for the full colour range please ask our Sales Representatives.



DISTRIBUTORS DATA



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THROUGH COMPLEX AND INNOVATIVE SOLUTIONS,  
WE BUILD A BEAUTIFUL AND SAFE WORLD WITH PASSION

WE CREATE UNIQUE, EXCELLENT CONSTRUCTIONS USING COMPONENTS FROM WORLD CLASS LEADING SUPPLIERS



POWDER COATINGS.

