



## *guide*

# Selection, cleaning and maintenance of entry doors

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# 1. Introduction

It is said that entry doors are the showpiece of a house, but they also say a lot about the owner. Looking at the doors we will learn, among others, the taste of the person choosing the door, whether they attract attention to details and care for safety. What your entry doors say about you is only up to you.

If you happen to read this guide, you must be onto ideal doors for your house, flat or company. Bear in mind that if you choose well, the next entry door shopping may take place only in a dozen or so or several dozen years. Therefore, we encourage you to reflect on a few basic questions which each conscious consumer purchasing entry doors should ask themselves. The consideration of possible answers will help you not only take a final decision on the purchase but it will also boost your knowledge.

## Firstly, think what external features the exterior doors should have?

- ◆ they should provide perfect thermal insulation
- ◆ they should protect against hard and variable weather conditions – low temperatures, wind, moisture
- ◆ they should protect the house against noise from the outside
- ◆ they should be tight
- ◆ they should be well composed with the general house architecture
- ◆ they should be adjusted to the construction type (single-family, multi-family)
- ◆ they should really protect the house and its residents against burglary
- ◆ they should be resistant to mechanical damage
- ◆ they should be stable, which also means invariability of dimensions and colour as well as resistance to harmful impact of weather conditions



## 2. Material matters – why it is worthwhile choosing aluminium?

The choice of material is of crucial importance in case of entry doors. The amount of noise reaching our interior and the temperature in our rooms depend on the material we choose.

Wooden doors are unfortunately characterized by low resistance to weather conditions, in particular moisture, and they require specialist maintenance. On the other hand steel doors are heavy, which hinders installation and transport, whereas PVC doors are sound-absorbing, cheap and resistant, however they do not enchant with looks and performance quality. Aluminium remains the in best entry doors material battlefield.

Aluminium is a light, environmentally-friendly, stable and resistant to weather conditions and mechanical damage material, which ensures perfect thermal insulation. Such doors constitute excellent protection against burglary, fire and external noise. Aluminium doors may be easily kept clean as the material does not attract noise.

When choosing entry doors, the only restrictions are expectations and imagination. If you are searching for timeless doors which will be used for years and, at the same time, look invariably good and follow current trends, you are bound to need special task doors. Doors made of aluminium, which are characterized by great properties and unlimited structural and design possibilities, are such doors.

Aluminium doors are recommended to persons who care for the environment as aluminium is the material subject to recycling in 100%. The processing process requires little energy and treatment is simple and environmentally-friendly. Moreover, in case of fire, aluminium does not excrete any toxic components, which is not the case in case of PVC for instance.

Owing to natural anti-corrosion coating of aluminium, doors made of this material are protected against harmful impact of natural environment which may destroy costly wooden doors with moisture or discolour with sunlight, and change the dimensions of PVC with heat.

Aluminium doors are also more rigid than wood or PVC, due to which they are suitable for bigger structures.

RK aluminium doors are defined as passive or energy-saving doors.

It is said that passive construction is in vogue but in fact it should be considered whether it is only fashion or satisfaction of the need which has been there for a long time.

Owing to passive windows and doors, so high-quality products with excellent thermal insulation, the consumption of electrical energy needed for heating the building decreases and this is good for the climate and our finances.

Door energy-efficiency is defined by heat transfer coefficient (U). In accordance with applicable standards this coefficient should not exceed  $2.6 \text{ W}/(\text{m}^2\text{K})$ . Aluminium exterior doors have very low heat transfer coefficient (even  $0,71 \text{ 67W}/\text{m}^2$ ), attesting to perfect thermal insulation.



### 3. Full or glazed doors?

Exterior aluminium doors may be full or glazed. In case of the latter many kinds of glazing, of various size or shape, may be applied. The kind of glass may also be selected as you can choose among transparent, ornamented or decorative glazing.



Glass sandblasting method provides almost unlimited selection of graphic patterns, therefore it is possible to perform even an atypical, personalized theme.

Doors with glazing provide more sunlight into the rooms, giving access to natural light and enlarging the rooms optically. The doors' appearance, which adds style and modernity to contemporary construction, is an unquestionable asset.

Large surface glazing will certainly provide much access to natural light but you will probably ask – what about the -dwellers' privacy? Though transparent glass may be used for the production of doors, the most popular glazing types include the ones with little transparency, which protect our privacy perfectly.

The examples of ornamental glass with limited transparency applied in exterior aluminium doors include:

**Venetian glass** – which acts as mirror

**Silver stopsol**– applied in commercial facilities

**Mastercarre** – with special decorative assets to be liked by those looking for strong motifs for the house.

Another, modern solution is the application of **glass with variable translucency**, also referred to as private glass. Private glass from opaque becomes transparent at our request. The change of properties referring to light transmission takes place under the influence of electrical voltage applied. The translucency effect may be controlled with a smartphone.



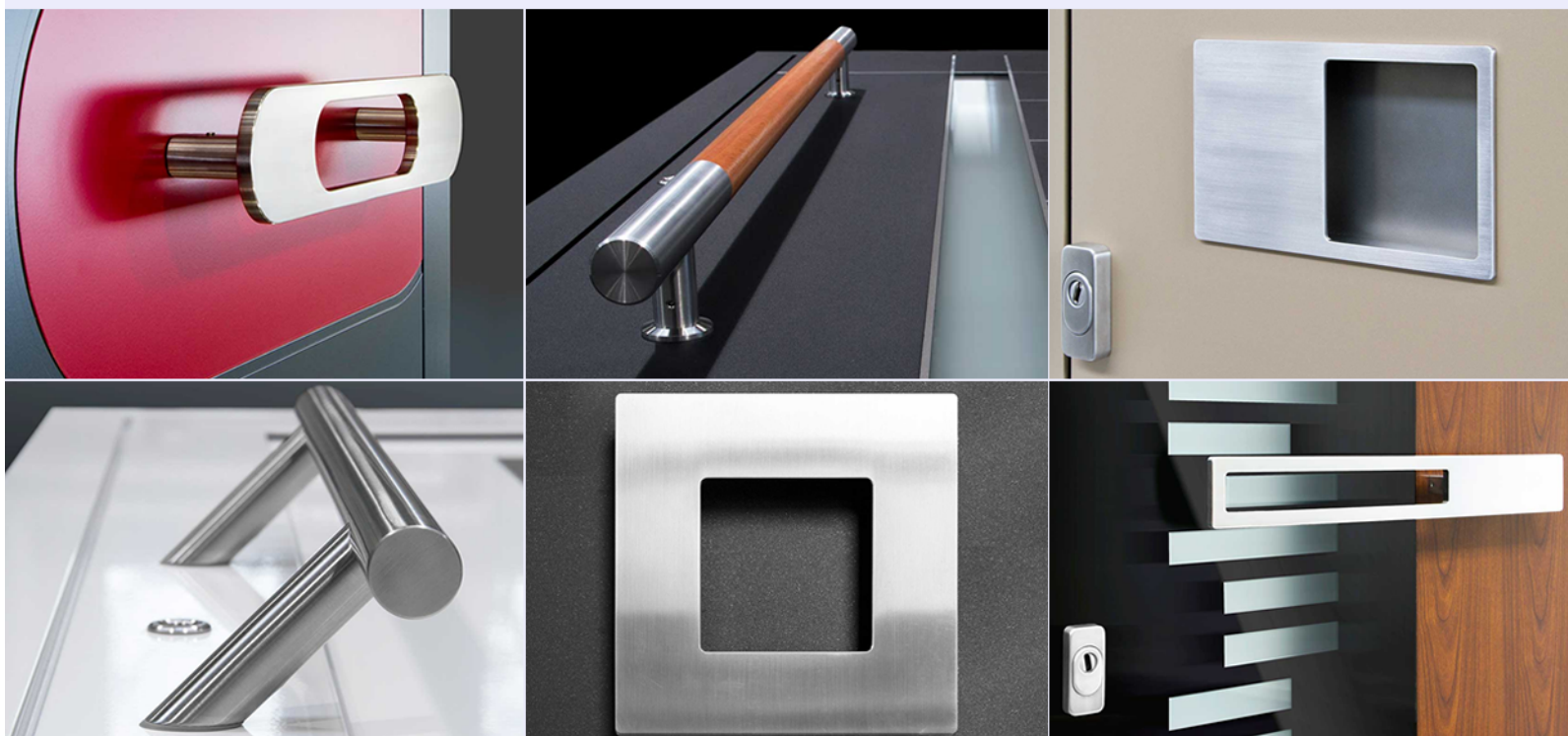
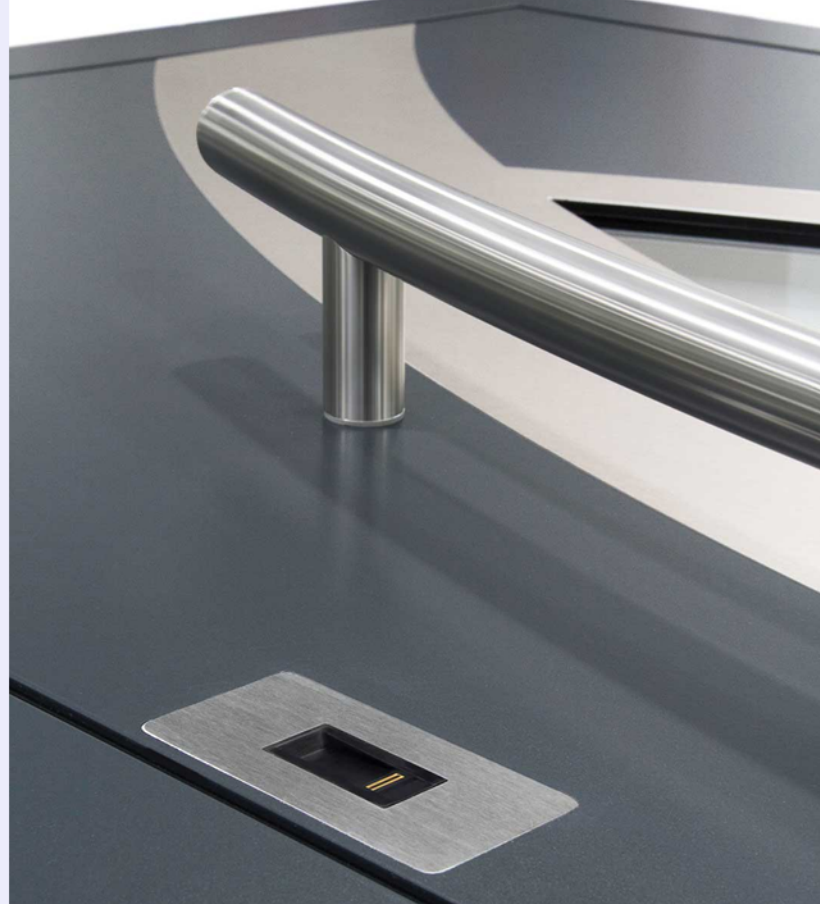
## 4. What accessories?

Selecting appropriate accessories not only the doors' aesthetic assets by also functionality and house safety may be increased.

Persons for whom house or flat protection is particularly important may go for an extremely modern solution, namely a **fingerprint reader, bluetooth or numerical keyboard**, enabling access only to persons who know proper combination of digits.

The choice also relates to elements significant for the functionality and appearance of the doors. Stainless steel handrails may be chosen with respect to shape, length and ornament – in doors designed with the use of door imitating veneer, handrails with a similar solution, referring to nature, will fit in nicely.

As regards entry doors protection, there is a variety of locks to choose from. Automatic multiple locking systems, which get locked without a key – shutting the doors is sufficient – attract attention.



## 5. What dimension?



Owing to flexibility of aluminium, doors with various shapes and dimensions may be executed. You should know that the exterior doors clear opening dimensions must meet the minimum standard provided for in the act. In accordance with the *Regulation of the Minister of Infrastructure of 12 April 2002 on technical conditions which buildings and their location should meet* (Chapter III, § 62.) the dimensions of entry doors to the building and utility rooms available to general public as well as flats in the clear opening should at least amount to: **width 0.9 m and height 2m**. In case of installation of two-wing doors, the width of one wing must be at least 90 cm.

Precise measurement of the door opening is of great importance for precise execution of tailor-made doors and correct installation. When performing measurements yourself, remember to measure the opening in the clearance and reduce it by 1-3 cm, however it is recommended to leave the measurement with a professional who is bound to do it correctly.

## 6. Appearance

There is a lot to be done by contemporary door designers. The shape, the dimensions and the colour are no limitation for them. Extensive structural possibilities of aluminium make it possible to design doors with atypical shape, with a large glazing surface and of atypical colour.

When selecting exterior doors for you house, flat or company, you should take into consideration the looks of the façade and the building architecture, and here there are two ways to go for – looking for harmony or contrast. Modern aluminium doors with glazings in combination with cool, modern construction are an example of harmonious combination, whereas smooth, white doors for a façade made of decorative stone which creates a multi-element surface create a contrast combination.

Furthermore, entry doors should not deviate much in terms of style from the windows.



# 7. Cleaning, curing, maintenance

Entry doors are the interior element that we choose for a long time. Finding an ideal pattern, matching both our dreams and the building architecture, we hope that the beauty of the doors will remain unchanged for a very long time. To make it happen, you need to stick to a few principles concerning cleaning, curing and maintenance of aluminium doors. Following the recommendations, you will make the doors look as good despite the passing of time.

In order to extend the life of entry doors, you should regularly carry out:

- ◆ cleaning and maintenance aluminium surfaces,
- ◆ maintenance of the seals,
- ◆ lubrication of hinges, fittings and other movable elements,
- ◆ maintenance of locks, door closers and door hinges,
- ◆ cleaning of door accessories: handrails, handles, fingerprint reader or numerical keyboard.

## 7.1. How often to clean and maintain aluminium doors?

Among various materials applied for the production of entry doors, aluminium is, beyond doubt, the most durable material, characterized by the greatest resistance.

Aluminium doors, compared to doors made of another material, have one more, important advantage – **they are easy to be kept clean as aluminium does not attract dirt and maintenance takes only a moment.** For correct functioning of the doors and invariability of their appearance it is, however, very important to remember about a few basic treatments and to carry them out regularly at time intervals recommended by the manufacturer.

The frequency of washing of aluminium doors depends mainly on the environment in which we live. If the doors are exposed to the action of rain, it is sufficient to wash them twice a year. In the environment characterized by constant presence of harmful agents (for instance exhaust fumes in the vicinity of a motorway, pollutants at industrial areas, moisture right above water tanks), doors require more frequent maintenance – usually four times a year.

The frequency of curing and maintenance treatments also depends on the method of operation. Operation degree for entry doors for a single-family house may be defined as normal. In case of such doors curing and maintenance treatments should be performed **twice a year – always before and after winter season.** Apart from that **doors should be cleaned always when needed, so when fouling occurs.** Particular elements of aluminium doors require specialist curing.

## 7.2. Cleaning of aluminium surfaces

Air moisture and exhaust fumes may gradually destroy aluminium. In order to prevent this, it is recommended to remove dust and dirt regularly with the use of soft damp fabric with the addition of a mild cleaning agent with pH 6-8, non-aggressive washing liquid for instance.

Specialist washing agent should be used for the removal of major fouling.

The agent for cleaning aluminium surfaces of wings and door-frames **should be characterized by good washing and degreasing properties and it should contain** corrosion inhibitors, protecting against gradual damage of the material.

The following agents should NOT be used for cleaning aluminium surfaces under any circumstances:

- ◆ solvents and other chemical compounds solving aluminium,
- ◆ substances containing abrasive particles,
- ◆ chemical compounds which may tarnish the aluminium surface,
- ◆ washing agents,
- ◆ agents containing acids and acidic solutions,
- ◆ polishing agents,
- ◆ agents containing such components as: sodium carbonate, potassium hydroxide,
- ◆ detergents containing acetone,
- ◆ detergents containing ammonia,
- ◆ other agents with highly caustic properties.

A good agent for curing should protect the doors against corrosion and create an additional protection layer. The method of use, intended use and precautions for a selected cleaning or maintenance substance should be each time checked at the package because some agents may not be recommended for powder painted surfaces.

Selection of an appropriate washing substance is very important. If we choose any washing agent, which will scratch the aluminium surface, we may allow for the occurrence of microcavities in which dirt will accumulate over time.

**It is recommended to clean RK doors with a cleaning agent whose recipe was prepared by the RK company.**

Materials recommended for cleaning of aluminium are soft fabric or soft sponge. The cloth or sponge should be dampened before use. Aluminium surfaces should never be dry cleaned. Washed surfaces should be rinsed with much clean water and then dried with a soft, water-absorbing fabric.

Materials which should NOT be used for cleaning the doors include:

- ◆ rough fabrics,
- ◆ hard and tough sponges,
- ◆ sand paper,
- ◆ instruments with sharp edges (e.g. knife),
- ◆ polishing materials such as steel wool.

Correct curing will extend the life of aluminium doors and, in addition, it will prevent them from picking up static and attracting dirt, effectively preventing fast fouling.



## 7.3. Maintenance of the seals

For entry doors to fulfil its task, we need to care not only for what can be seen at first sight, namely the door wing, but also the seals:

- ◆ Seals should be, above all, protected against unfavourable weather conditions. An **agent containing silicone resin** will be the best for the maintenance and curing of seals. Owing to this component, you will keep seals flexible for a long time. Moreover, resin protects seals against freezing to profiles in the winter season.
- ◆ In case of the lack of silicone grease, you can use industrial grade petroleum jelly for greasing the seals.
- ◆ The maintenance agent should be applied with a clean cloth which will not leave fibres. Damaged seals should be replaced.

Owing to a few basic principles of seal maintenance, the doors will fully fulfil their task and they will protect us against winter frost in 100%.

## 7.4. Lubrication of hinges, fittings and other movable elements

Other door elements which should be maintained are hinges, fittings and other movable elements at risk of corrosion and effects of dry friction. **You should remember about regular lubrication** for correct functioning. The best substances for the maintenance of the aforementioned elements will be the ones **with lubricating properties, necessarily with no contents of acids**.

In order to ensure durability and correct functioning of fittings, they need to be regularly inspected and, if needed, controlled and their maintenance should be performed at least twice a year. If, performing the technical inspection of fittings we notice substantial wear and tear, which hinders correct functioning of the doors, it may be necessary to call a serviceman or to replace the damaged element.

Proper maintenance of fittings, hinges and movable elements of the doors should be as follows:

- ◆ the stability of fittings fastening (loosening of fastening elements may damage the fitting) should be controlled once a year,
- ◆ the inspection of wear and tear and the correctness of fitting operation should be carried out,
- ◆ it is recommended to check the fastening of bolts in aluminium profiles, loosened or damaged bolts should be tightened or replaced,
- ◆ you should care for the cleanliness of fittings,
- ◆ dust, grease and dirt should be regularly removed from fittings and movable parts of handles (first dry e.g. with a vacuum cleaner and then with a damp, soft cloth saturated with diluted agent with neutral pH),
- ◆ only mild, acid-free agents should be used for cleaning the fittings, aggressive detergents intended for rubbing, which may damage the fitting, should not be used,
- ◆ fittings should be lubricated or oiled,
- ◆ lubrication should be performed after cleaning,
- ◆ lubricant or oil which does not contain acids or resins, preferably containing silicone, should be used for lubrication,
- ◆ the excess lubricant at the fitting should be removed with a clean, soft cloth.

## 7.5. Maintenance of locks, door closers and door hinges

Neglecting the maintenance of locks and hinges may lead to delayed recognition of incorrect functioning of the doors, for instance incorrect strength or velocity of closing.

For this reason, the wear and tear as well as the manner of the locks and door hinges functioning should be inspected at least once a year, remembering that doors should operate smoothly. Should a loose bolt be noticed, it should be tightened and worn elements should be replaced.

For correct operation of the lock, basic operation principles should be observed:

- ◆ The lock should be oiled and all its functions should be checked at least once a year.
- ◆ The door handle may be loaded only clockwise and with the maximum strength of 150 N (15 kg).
- ◆ It is not possible to turn the key and the door handle at the same time.
- ◆ All damaged lock elements e.g. due to a burglary attempt, should be replaced.
- ◆ It is not allowed to make openings in the doors in which a lock was already installed.
- ◆ Doors should not be transported by holding a door handle, handrail or lock.
- ◆ The lock should be always handled with a proper key.

### Door closer

Once a year the parts of the door closer arms should be oiled and inspected whether the door operation is smooth and closing pace appropriate.

## 7.6. Cleaning door accessories

### Cleaning handrails and door handles

In order to keep perfect cleanliness in the house, many of us wipe handrails and door handles at which fingerprints often remain. Specialist RK cleaning agent, as well as damp, soft cloth or suede leather will be the best for the removal of dirt from stainless steel elements. This way we will remove ordinary dirt, fingerprints and more intensive fouling.

### Cleaning glass door elements

Special substances should be used for cleaning glass elements. No newspapers and other materials which may scratch the glass should be used.

### Cleaning fingerprint reader

The home key Biometric Access Control System does not require any care on the part of the user apart from occasional cleaning of the sensor, which is required for correct operation of the reader.

Any maintenance should be performed by a person holding relevant electrical license.

The sensor surface is cleaned automatically each time someone swipes their finger through. However, if there is some fouling visible in the sensor, it should be wiped with a damp cloth, and a few principles should be borne in mind:

- ◆ a soft cloth which will not scratch the sensor surface (for instance cotton one) should be used for cleaning the sensor,
- ◆ clean water with no detergents should be used,
- ◆ the cloth must be damp and not wet,
- ◆ the sensor should not be rubbed and cleaned applying much strength or with the use of a dry cloth,
- ◆ the sensor should be cleaned gently and carefully.

## Cleaning numerical keyboard

The ekey home system does not require maintenance. For the sake of safety numerical keyboard should be, from time to time, cleaned off fingerprints and fouling with the use of a slightly damp (but not wet!), soft cloth. Clean water with no additive of cleaning agents should be used for cleaning.

# 7.7. Practical advice for aluminium door users

## Cleaning and maintenance:

- ◆ Aluminium doors should be always cleaned from the top to the bottom.
- ◆ Doors should never be cleaned at strong sunshine as such action involves a high risk of occurrence of stains resulting from rapid drying of the cleaning substance.
- ◆ When buying a new cleaning agent, it is recommended to carry out a test by applying a small amount of the agent on a small surface (hidden place should be chosen for this purpose). If the effect of cleaning is satisfactory, cleaning should be continued.
- ◆ Fouling should not be removed with the use of objects with sharp edges because this may cause scratching.

## Operation:

- ◆ Doors should not be obstructed with any objects such as wedges and no elements should be inserted between the frame and the wing (such action may lead to tearing out door hinges).
- ◆ If there is some object e.g. a garden hose or an electrical cable between the doors, they should not be closed.
- ◆ Jerking closed doors must be avoided.
- ◆ Door must not be opened with a pram or another object pushed by you.
- ◆ No additional loads should be exerted on the doors.
- ◆ On a windy day a door wing should not be left open.