

# 12 Advantages of Aluminium Windows and Doors

What are the advantages of aluminium windows and doors? It is a material with a thousand resources: durable, resistant, minimal, eco-friendly and capable of providing **excellent thermal** and **acoustic insulation**. This post lists all the advantages of aluminium.

## Why choose aluminium for window and doors

When trying to figure out **how to choose a window or a door**, there are many variables to consider: among them, there is undoubtedly the material. Many are **undecided between aluminium and PVC**: there is no such thing as the perfect material for everyone, but there is certainly the ideal material to meet the needs of individual customers. Aluminium is certainly the material that can meet the greatest number of very different requirements.

**METRA Building products** are made of aluminium because it is a truly effective material that combines **strength, lightness** and **versatility**.

Aluminium guarantees not only an elegant aesthetic appearance and practically eternal durability, but also high performance in terms of thermal and acoustic insulation, as well as high corrosion resistance and virtually non-existent maintenance.



# Advantages of aluminium windows and doors

How and, above all, why choose aluminium windows and doors?

The advantages of aluminium are many, making it an excellent material for the production of windows and doors. Here are 10 characteristics of this material that will satisfy every need.

## 1 – Resistance

Aluminium is first and foremost a very **solid** and **resistant** material, despite its lightness. This characteristic makes it a particularly suitable metal for building window and door frames: aluminium frames are able to withstand sunlight and the action of the most violent atmospheric agents very well.

Aluminium is also resistant to the signs of time: after years and years, it will be virtually impossible to notice any signs of wear and tear on aluminium frames. Aluminium windows and doors are also extremely **resistant to corrosion** and **oxidation**. They are therefore also perfect for use in marine environments, where other types of material might suffer excessively from saltiness.

The solidity and versatility of aluminium make it a suitable material even for large windows: there will be no need for steel reinforcements or other compromises, because aluminium is strong enough to support glazing even much larger than 250 cm in width and/or length.

These large windows can hardly be realized with PVC windows, unless steel reinforcements are inserted, which risks compromising thermal insulation. Furthermore, the continuous expansion of PVC due to temperature differences causes a progressive deterioration of the window itself, which is even more evident with large windows.

## 2 – Durability

Related to strength, one of the greatest advantages of aluminium is its durability: aluminium is a virtually eternal material in itself, which does not deteriorate over time. Wear, signs of time and weathering can do nothing against the high mechanical strength of aluminium, which, decades after decades, remains unchanged as on the first day.

When used in the production of window and doors, it gives them an **average lifespan of 50-60 years**, compared to about half that (25-30 years) for PVC.

## 3 – Design

As an extremely durable material, aluminium has another great advantage: the possibility of making windows with a very slim, minimalist and elegant frame.

**Lightness** and **essentiality** are the first words that come to mind when thinking of aluminium and, indeed, this material is perfect for those who want windows with a slim, clean design. A design that lends itself well to the most modern homes, but also to industrial style or any home that wants to display a strong character.

## 4 – Brightness

The strength and minimalist design of aluminium also make it the only material really suitable for **all-glass windows or curtain walls**, where the frame is reduced to a minimum for a truly refined and modern aesthetic impact.

With overall dimensions that hardly exceed 63 millimeters, aluminium frames give the environment a brightness that no other type of window can guarantee.

Aluminium is therefore the ideal material for two opposing situations: for those who have large spaces and want large windows without mullions, but also for those who have small windows and want to recover every single millimeter in order to receive more sunlight.

## 5 – Thermal insulation and energy saving

Windows and doors must also be able to guarantee **outstanding thermal insulation** to be truly effective. In fact, thanks to thermal break technology, aluminium guarantees absolutely satisfactory performance also in terms of insulation.

The **'thermal break'** is a highly insulating material of the latest generation – generally polyamide – that is inserted inside the window frame, thus allowing non-conductivity of the temperature between the outside and inside. This means that the cold temperature outside will not contaminate the warm temperature inside the house (and the other way around), and the annoying condensation on the window pane will not occur. Eliminating the problem of condensation also eliminates the possibility of mould forming on the windows, which greatly improves the **overall healthiness of the house**.

METRA Building aluminium windows and doors are equipped with HES (High Energy Saving) technology, which guarantees maximum performance in terms of thermal insulation. As the name suggests, the advantage of HES technology lies in energy saving: by insulating the internal temperature from the external temperature in an excellent manner, the **costs of heating** the house in winter and cooling it in summer **can be considerably reduced**.

## 6 – Sound insulation

Another function that a window frame must be able to perform well is sound insulation: when we work or rest, we do not want to be disturbed by outside noise.

Combined with the high quality of the aluminium material, modern thermal break technology also guarantees **impeccable sound insulation**. In this case, however, it must be remembered that the window frame alone is not enough to achieve a perfectly acoustically insulated house: other measures such as double or triple glazing and, above all, the installation of the frames by a professional will also be needed.

## 7 – Security

When it comes to security, many elements contribute to a window frame's ability to **resist break-ins**. When combined with quality glazing and hardware, aluminium windows and doors are definitely secure against any break-in attempts: light but solid and strong, aluminium is a metal that is difficult to damage.

METRA Building aluminium windows and doors are also equipped with a perimeter burglar alarm predisposition and RC2 and RC3 class burglar-proof systems to ensure a peaceful night's sleep and a feeling of profound security inside your home.

## 8 – Fire resistance

Unluckily exposed to fire, materials such as wood and PVC can be irreversibly damaged.

The **advantage of aluminium windows** and doors in this case is the material itself, which is a non-combustible metal, classified as fire class A1. This means that aluminium does not contribute to the spread of fire, nor does it release any harmful emissions when exposed to high heat sources.

## 9 – Eco-sustainability

In the 21st century, it is normal and legitimate for people to care about environmental and sustainability issues. Among the advantages of aluminium is this: it is a naturally available material that is 100% recyclable, an **infinite number of times**.

Unlike PVC, a thermoplastic material whose quality decreases as it is recycled, the positive characteristics of aluminium remain unchanged even when it is recycled tens or hundreds of times. The most positive aspect of this extraordinary circular economy is that, while maintaining high performance, the cost of aluminium drops as it is recycled.

Moreover, aluminium is a completely environmentally friendly material because it is not harmful to the environment and does not release any toxic substances. Aluminium can therefore be considered a true green material, even when energy costs and production procedures are considered.

## 10 – Customization

In addition to being light and strong, aluminium is also a very ductile material: it can be cut and bent in many different ways to suit the needs of any customer.

But the real customization of aluminium frames emerges in the **vast range of colors and shades** from which you can choose. In fact, by means of painting and oxidation, all you have to do is indicate your preferred color and the aluminium window frame will be just as it was imagined, with even the possibility of choosing two different colors for the outside and inside of the frame. This is an enormous advantage of aluminium, which allows any aesthetic and architectural requirements to be met.

## 11 – Practicality

Another advantage of aluminium that will be of great interest to those involved in the daily cleaning and maintenance of the home: aluminium windows and doors need absolutely no special cleaning or maintenance procedures.

Just clean it in the same way as you clean all other surfaces in the home: a soft cloth, water, and if desired a neutral detergent.

Aluminium is a strong and durable material by nature, which makes it extremely practical in everyday life.

## 12 – Accessibility

The last of the advantages of aluminium is for those who have to solve accessibility issues and know how wooden or PVC casement door thresholds can cause problems for walking or wheelchair access.

Thanks to the thin thickness of the material, aluminium casement doors have low thresholds that reduce obstacles to a minimum, breaking down any architectural barriers and making movement much easier for everyone.



## Choosing aluminium window frames

The cost and choice of windows and doors have a great influence on the construction or renovation of a house, so it is important to assess well all the characteristics of the chosen material.

As windows and doors are not elements that are usually replaced after a few years, it is good that the material they are made of does not give problems, resists the passage of time well and provides high performance from a technical and aesthetic point of view.

As we have seen, aluminium is able to fulfil all these basic requirements for window frames. Moreover, it is the preferred window material of those who desire a modern, up-to-date home: elegant, essential, and able to let as much sunlight as possible into the home. The **design of aluminium window frames**, therefore, is one of the **great advantages** that must be considered.

In a nutshell, all the advantages of aluminium make it **an ideal material for window frames**, especially if you want a refined design and large, light-filled windows, as well as light, durable and practically indestructible frames.

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ALUMETALS ENGINEERING COMPANY

[Engineering-Dep@Alumetals.com](mailto:Engineering-Dep@Alumetals.com)

Mob: +964 750 1988 432