

Curtain Wall Aluminum Extrusion

Simple structure, easy installation.

Easy cleaning, energy-saving, good air-tightness.

Curtain walls systems with the function of energy-saving are available, including frame curtain walls, hidden frame curtain walls.

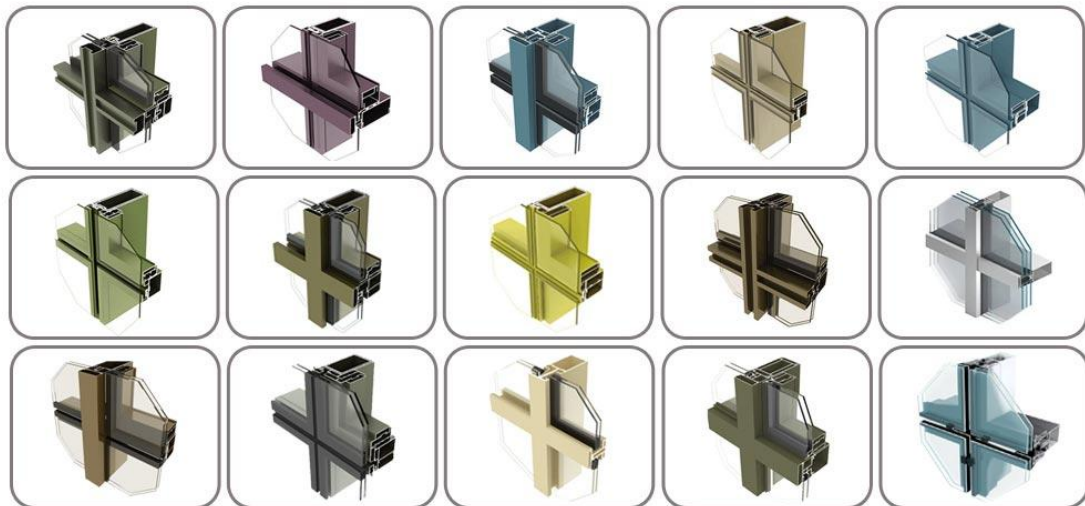
Aluminum Extrusion Of Curtain Wall Profiles can be used for exterior decoration of commercial buildings, industrial buildings, residential buildings, villas, etc.

WJW Aluminium: Your Premier Curtain Wall Aluminum Extrusion Supplier

As one ISO certified Aluminum Profiles manufacturer, WJW Aluminium specialized in marketing and producing various aluminum extrusions for curtain walls.

Of course, we can produce any Curtain Wall Aluminium Extrusion according to your drawings and samples with different kinds of surface treatment.

Finished Products



WJW aluminium Curtain wall aluminum extrusion refers to a cladding complex that is hung from a constructional frame. It has the highest precision quality degree, a long-lasting product for various applications.

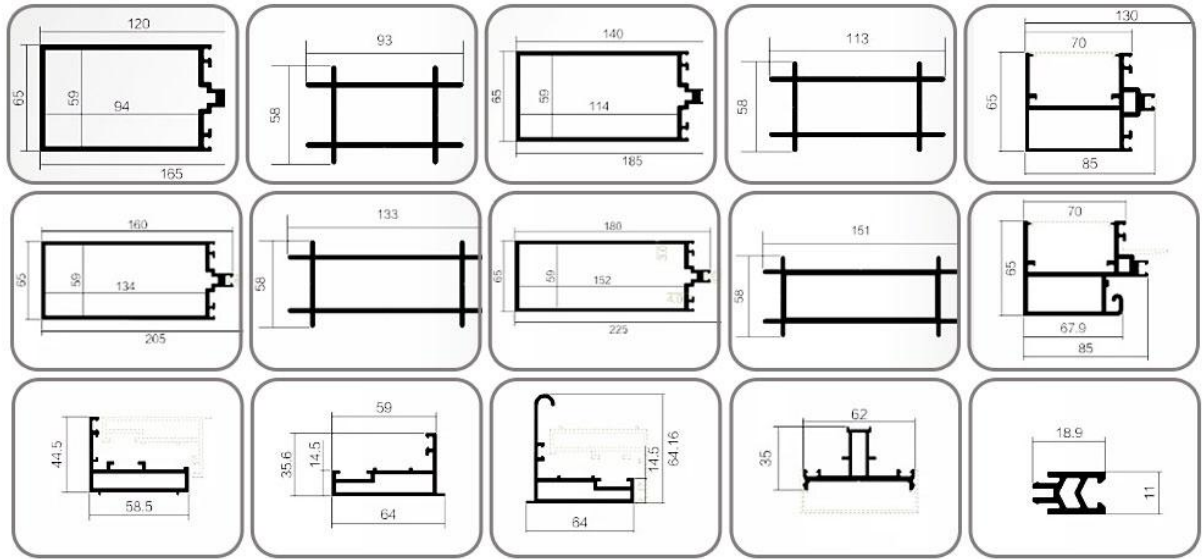
WJW aluminium owns more than a thousand available standard designs, fast-machined curtain wall aluminum extrusions to meet your urgent needs.

Item Type	Curtain Wall Aluminium Extrusion
Material	6000 Series aluminum alloy
Temper	T3-T8
Size	Standard Series Curtain Wall Aluminium Extrusion, or customized according to your needs.
Application	Aluminum Profile, Door and Window, Industrial, Racks, Fixturing & Shelving
Color	Natural Silver, Black, or customized color.
Surface treatment	Mill finish, Anodizing, Sand Blasting, Powder coating, PVDF, etc.
Deep processing	CNC bending, milling, cutting, tapping, welding, assembling, punching, drilling.
Standard	GB, ASTM , AISI , DIN , BS, JIS
Certification	ISO9001:2008,ISO 14001:2004
Delivery Time	15-20Days
OEM/ODM	Acceptable

WJW Aluminium can custom curtain wall aluminum extrusion regarding your specifications. Also, we can help you save time and especially money within the entire process.

We supply the best curtain wall aluminum extrusion that brings countless advantages to your business and other applications.

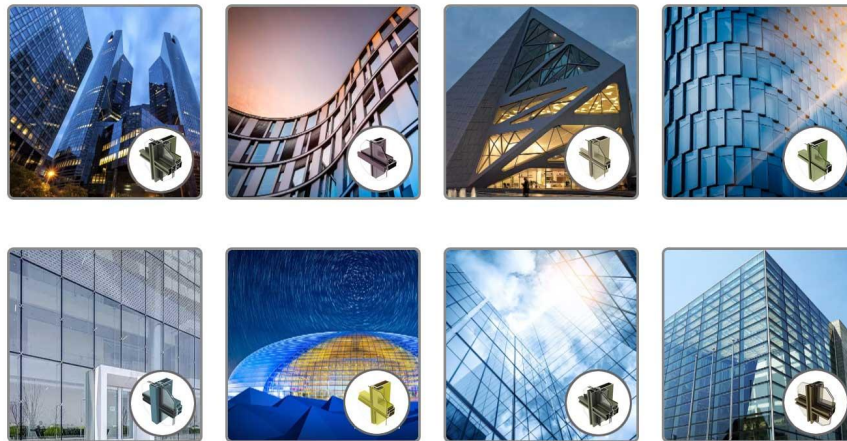
Common Shapes



We carry a variety of curtain wall aluminum extrusions with custom sizes and colors. Furthermore, Wellste can speed up the delivery process within 15 days.

We also double-check the quality of our products to last longer and achieve your satisfaction. Talk with one of our sales representatives to search for a suitable item for you.

Applications

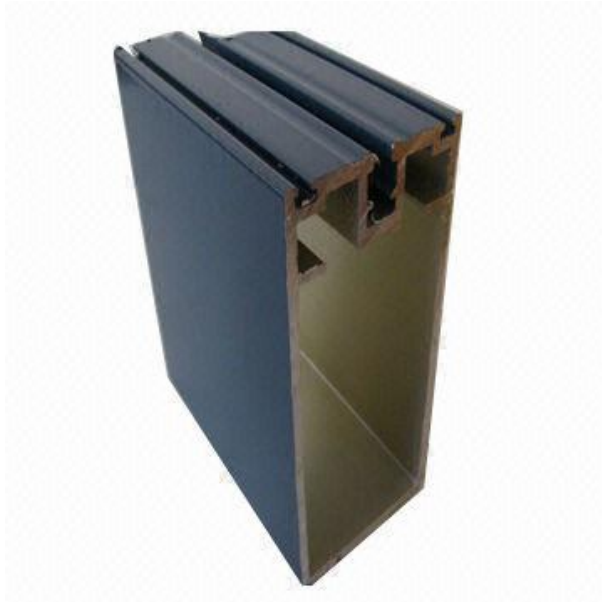


As a specialized manufacturer in China, WJW Aluminium supplies huge numbers of curtain wall aluminum extrusions to customers in various industries.

We offer one-stop [aluminum extrusions](#) and services that help you save time and money.

Aluminum Curtain Wall Extrusions: The Ultimate FAQ Guide

What Are Aluminum Curtain Wall Extrusions?



Aluminum curtain wall profile

The American Society of Testing and Materials defines a curtain wall as a nonbearing exterior wall secured to and supported by the structural members of a building.

From the above definition, we can simply define a curtain wall as a building's façade or exterior that does not bear any building load.

Also, the curtain wall bears no weight, not even its weight. The curtain wall transfers all its weight to the building.

Notably, the weight transfer occurs at the interlocking connections of the curtain wall and the building.

Most of these connections are situated on the floors or columns of the building.

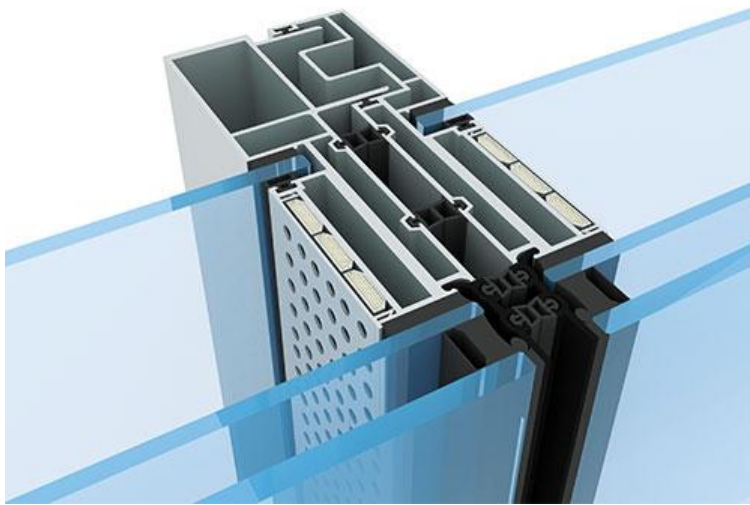
Thus, aluminum curtain wall extrusions are curtain walls keenly designed from [aluminum extrusions](#).

It's worth mentioning that these are the most common and widely used curtain walls in the architectural industry.

What Are Aluminum Curtain Wall Extrusions Used For?

The usage of Aluminum curtain wall extrusions in the architectural industries is mainly for:

- Building facades
- Construction green buildings
- Glazing
- Wall cladding
- Building exteriors

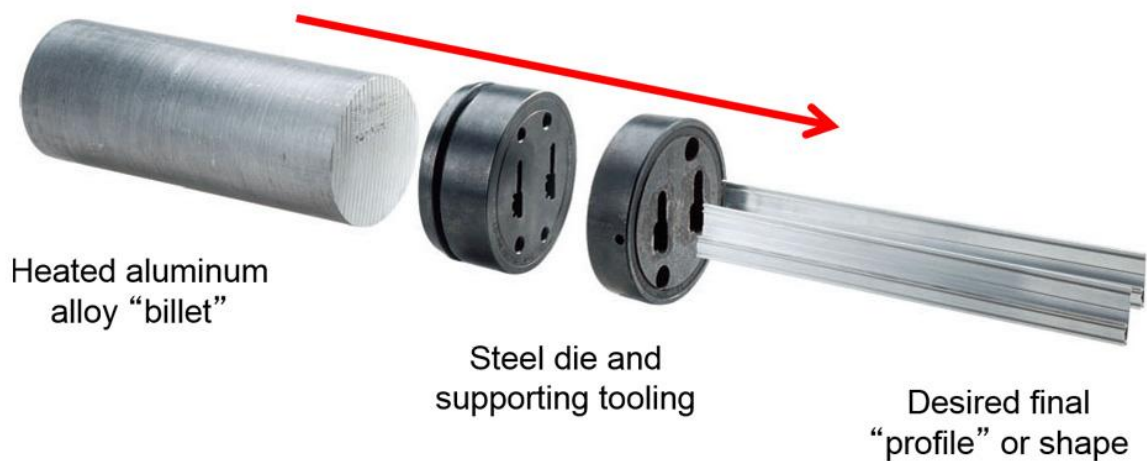


Aluminum curtain wall extrusion

How Do You Make Aluminum Curtain Wall Extrusions?

As the name suggests, we make our aluminum curtain wall extrusions through the [extrusion technique](#).

The extrusion technique involves forcing an aluminum billet through a die with a definite cross-sectional profile such as a rod or tubes.



Aluminum extrusion process

Notably, aluminum extrusions play a vital role in the fabrication of the curtain wall system. Hence, they are given essential attention during the manufacture of curtain walls.

After extrusion, the aluminum extrusion undergoes further precise processing, including cutting, drilling, notching, or grooving.

The next stage after the processing of the aluminum extrusion is the assembly stage. Here, the significant components, such as glass insets and aluminum extrusions, are attached.

Structural silicone and silicone sealant are applied to ensure a durable seal between the frame and the panel materials.

Finally, the now assembled units are cleaned and packed, ready for shipping to your building site.

What Is The Difference Between A Stick Curtain Wall System And A Unitary Curtain Wall System?

Stick system was the earliest form of curtain wall system dating back to the 1917.

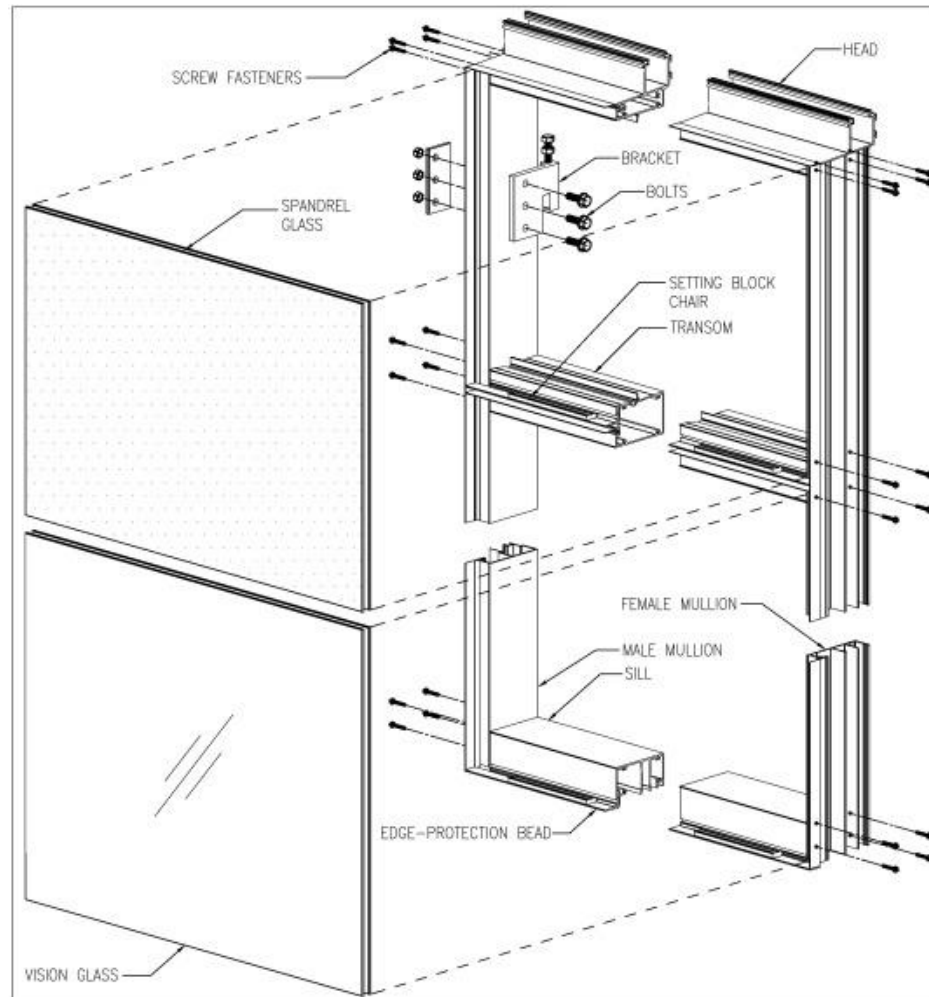
It involved the use of linear aluminum extrusions known as mullions.

These aluminum extrusions were fabricated and fixed individually to the building.

Eventually, the introduction of prefabricated curtain wall systems followed to speed up construction and improve quality.

A unitary curtain wall system is thus a prefabricated curtain wall system, i.e., a curtain wall manufactured and partially assembled offsite.

What Are The Parts Of Aluminum Curtain Wall Extrusions?



Aluminum wall facade

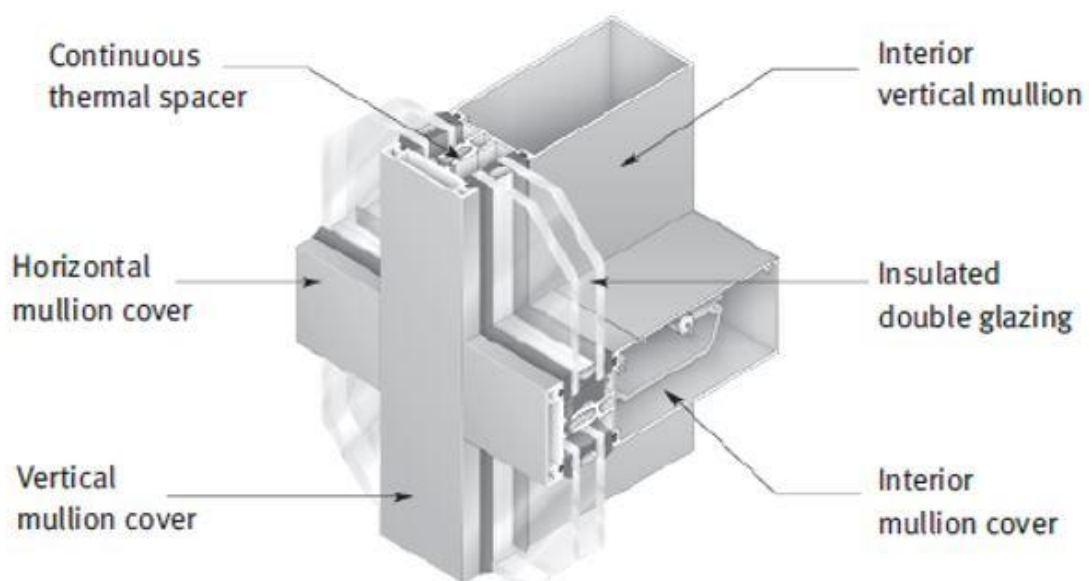
The structure of an aluminum curtain wall extrusion is a simple one. As such, it does not have many parts.

Usually, an aluminum curtain wall extrusion will comprise:

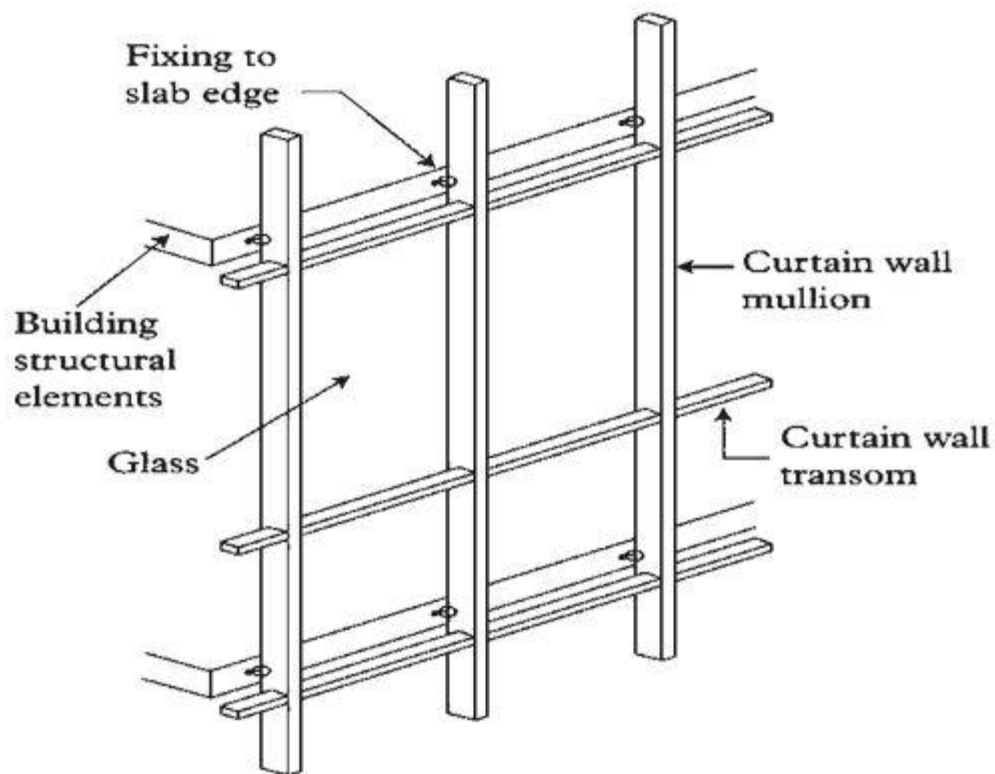
- **Aluminum extrusion/Mullion** – It is the main component of aluminum curtain wall extrusion. Commonly, it is made from the 600 series aluminum alloy.
- **Panel materials** – These include the glass insets and the glass.

- **Sealant material** – The main sealants used to hold the panel materials and the mullion together are structural silicone and silicone material.
- **Fixing to the building** – Ideally, a curtain wall should not support itself but entirely get supported by the building. The fixing attaches the curtain wall to the building for support.
- **Thermal spacer** – Allows for expansion and contraction of the curtain wall.

The parts mentioned above vary depending on how modern the aluminum curtain wall extrusion is. For more visual comprehension, here are two diagrams showing the components.



Parts of aluminum curtain wall extrusion



Parts of aluminum curtain wall extrusion

Which Material Grade Do You Use To Make Aluminum Curtain Wall Extrusions?

An aluminum curtain wall extrusion is as good as the type of aluminum alloy used in manufacturing it.

With this understanding in mind, we use the 6000 series aluminum alloy, specifically 6061 and 6063.

Our decision to employ the use of these two primary alloys is due to the below reasons.

Aluminum Alloy 6061

Even though the 6061 alloy is the most heat versatile aluminum alloy, it retains its aluminum properties after heat processing.

What's more, it has a high corrosion range and vast mechanical properties.

Also, it is possible to use various techniques to fabricate it, including extrusion.

Lastly, you can weld this alloy type with any method, plus you can also furnace braze this alloy.

Visually, this alloy features rounded corners for the angle and tube shapes.

Aluminum Alloy 6063

The 6063 alloy is popularly known as the architectural alloy. It features high corrosion resistance, high tensile strength, and excellent finishing.

Additionally, it is ideal for various anodizing applications. Unlike the 6061 alloy, it typically has square corners for the angle and tube shapes.

You can now comfortably conclude why we use the 6000 series aluminum alloy for our aluminum curtain wall extrusions from the above information.

What Are The Surface Treatment Options For Aluminum Curtain Wall Extrusions?

The common surface treatment alternatives for aluminum curtain wall extrusions include sand anodizing, mill finish, polishing, and painting.

Sand Blasting

Sandblasting uses compressed air to form a high-speed jet beam, which sprays the abrasive (brown corundum, emery, steel sand, glass beads, etc.) on the aluminum extrusion.

All this is done at high speed.

The high speed, plus the cutting action and the impact of the sand, leaves the aluminum curtain wall extrusion with a degree of cleanliness and roughness.

Sand blasting also results to;

- A stronger aluminum profile
- Increased corrosion resistance
- A durable coating
- Improves the aesthetic properties of the aluminum profile

Anodizing

Anodizing involves the artificial creation of aluminum oxide on the surface of the aluminum curtain wall extrusion.

Commonly, sulfuric acid is used to initiate the formation.

Apart from acting from providing a coating to the aluminum curtain wall extrusions, anodizing also;

- Increases durability
- Boost corrosion resistance
- Makes the aluminum curtain wall extrusion more decorative
- Improve surface uniformity
- Offer various colors for the aluminum curtain wall extrusion

Painting

The popular methods used for painting aluminum curtain wall extrusions include dip coating, powder coating, flow coating, electro deposition, and electrostatic spraying.

Painting of aluminum curtain wall extrusion helps;

- Increase corrosion resistance
- Cover minor metal defects
- Ensure consistency of various batches

Polishing

Polishing generally means sanding the aluminum curtain wall extrusion, giving it that shiny reflective finish. However, you require special buffing equipment for sanding.

Polishing is commonly associated with improving the aesthetic feature of the aluminum curtain wall extrusion.

Mill Finish

A mill finish implies the aluminum curtain wall extrusion has no surface treatment. It has not undergone anodizing/sandblasting, painting, or polishing.

Which Features Should You Look For In Aluminum Curtain Wall Extrusions?

Having a keen eye on the specifications when selecting an aluminum curtain wall extrusion will ensure you acquire value for your money.

While at it, you can look at the below key features;

- ***The material used*** – The best alloys for aluminum curtain wall extrusions are the 6000 series alloys, i.e., 6061 and 6063.
- ***Surface treatment*** – An aluminum curtain wall extrusion with surface treatment is more durable. The standard surface treatment options include painting, anodizing, and sandblasting.
- ***Color*** – Your manufacture should be able to customize the color of the aluminum curtain wall extrusion to your liking.

- **Assembly type** – This can either be a unitary or stick system. Nowadays, unitary aluminum curtain wall extrusion systems are preferred since they are fast to install and durable.

What Are The Available Color Options For Aluminum Curtain Wall Extrusions?

One thing that makes the aluminum curtain wall extrusions stand out is their elegant color options.

Almost all manufacturers provide the option of customizing the color as per your taste and need.

The type of finish applied to the aluminum curtain wall extrusion will contribute to its final color.

Aluminum curtain wall extrusions have various colors, including bronze, blue, green, black, white, beige, etc.

The images below display the various color options for aluminum curtain wall extrusions.

For Anodized Finishing



Anodizing finish

For Paint Finishing



Paint finishing

How Strong Are Aluminum Curtain Wall

Extrusions?

Aluminum is marvelously strong, and so are the aluminum curtain wall extrusions. An admirable characteristic of aluminum is that it does not lose its strength even in extreme conditions.

Amazingly, unlike plastic, aluminum increases in strength in freezing temperatures.

Here is an interesting fact: aluminum is lightweight (about 1/3 of copper), yet it is among the strongest construction materials.

What Is The MOQ When Purchasing Aluminum

Curtain Wall Extrusions?

We measure the Minimum Order Quantity (MOQ) for our Aluminum Curtain Wall Extrusions in kg. Specifically, our MOQ is 500kg

MOQ helps us to cut the costs of production by producing in bulk at once.

What Are The Key Considerations When Designing Aluminum Curtain Wall Extrusions?

Design is crucial in ensuring that any aluminum curtain wall extrusion will serve its purpose for a lengthy period.

Some key considerations to make during the designing phase include;

- **External parameters** – These include factors such as wind pressure. When designing a curtain wall, you should have the prevailing weather conditions of the project's location in mind.
- **Architectural intent of the curtain wall** – We can all agree that every architect has a mind of their own. Consequently, the design of the curtain wall should conform to the specific architectural plan.
- **Previous experience** – It will guide you on the system to design and which not to design
- **Project specifications** – Customizing a curtain wall as per the project specifications will make it ideal for that particular project.
- **Implementing tested system** – Tested systems are almost flaw proof. Implementing them in the design will enhance sustainability and durability.
- **Engineering** – With the engineering aspect, you can ensure that the design is fit and safe for the intended purpose.

What Quality Standards And Certifications Should Aluminum Curtain Wall Extrusions Comply With?

Quality standards and certifications for aluminum curtain wall extrusions ensure that you get quality and market standard curtain walls as the buyer.

All the aluminum curtain walls manufactured for use in the construction industry should comply with the following standards.

- Aluminum Association (AA) Standards
- Designation System for Aluminum Finishes (DAF 45) Standards
- American Architectural Manufacturers Association (AAMA) standards.
- ASTM International Standards
- Canada Green Building Council (CaGBC) Standards
- Canadian General Standards Board (CGSB)
- CSA International Standards
- Environmental Choice Program (ECP) Standards
- Underwriter's Laboratories of Canada (ULC)

The common certifications include;

- Relevant ISO Certification – for the aluminum curtain wall extrusion manufacturer in China
- TUV Certification
- GB Certification

Why Should You Incorporate Thermal Breaks In Aluminum Curtain Wall Extrusions?

The purpose of a thermal break is to accommodate the temperature variation occurring on the aluminum curtain wall extrusion.

Generally, thermal breaks improve the condensation resistance and thermal performance of the curtain wall.

Ideally, a thermal break should be made from polyester reinforced with nylon. It should have a minimum thickness of ¼ inch or up to 1 inch or more.

How Do You Attain Support For Aluminum Curtain Wall Extrusions?

Different aluminum curtain wall extrusion systems attain support differently. Below is how the two main systems attain support.

Stick Aluminum Curtain Wall Extrusion

Commonly, they have two vertical mullions running past two floors. These mullions have a lateral/combined gravity anchor at one floor, and on the other floor, only a lateral anchor.

Unitized Aluminum Curtain Wall Extrusions

The unitized aluminum curtain wall extrusions feature anchors at each vertical mullion pair along the slab's edge.

Do Aluminum Curtain Wall Extrusions Require Regular Maintenance?

If you need to maximize the service life of your aluminum curtain wall extrusion, then regular maintenance of the same is not up for debate.

Most aluminum curtain wall extrusions are anodized or painted, making them durable.

In the case of a paint coat, you can re-coat the curtain wall as a maintenance practice.

Alternatively, if the curtain wall was anodized, it is impossible to “re-anodize” it.

However, you can clean it and apply a proprietary clear coating to boost durability and appearance.

Why Is Aluminum Extrusion The Ideal Material For Curtain Wall Frames?

Aluminum extrusion is preferred for use in curtain wall frames due to the following reasons;

- It has a higher strength-to-weight ratio.
- Minimal contraction and expansion.
- Wind load and glazing capability.
- Aesthetic features.
- Low maintenance requirement.
- Efficiently seals the building structure.
- Allows for maximum indoor daylighting
- Easy to assemble and fabricate.
- Vast thermal capabilities.
- Features various finishing options.



Aluminum curtain wall extrusion

Can You Recycle Aluminum Curtain Wall Extrusions After Their Service Life?

Yes, aluminum curtain wall extrusions can be recycled at the end of their service life.

The recycling of aluminum curtain wall extrusions is mainly done by demolition and salvage contractors.

These contractors usually require not less than 1,000 sq. ft. of the aluminum curtain extrusion wall to recycle for economic reasons.

However, if the aluminum curtain wall extrusions have contaminations such as fracture glazing, sealants, etc., the salvage contractors may pay pretty little for the materials.

What Should You Consider Before Installing Aluminum Curtain Wall Extrusions?

Some key issues you should consider before installing your aluminum curtain wall extrusions include;

- Upon receipt, check for the quality and quantity of the aluminum curtain wall extrusions.
- Cautiously move or transport the boxes containing the aluminum curtain wall. This helps to prevent any distortion.
- Dry storage to prevent discoloration or staining of the painting and finishes on the aluminum curtain wall extrusion.
- Carefully inspect the surrounding construction and openings where the aluminum curtain wall extrusions are to be installed. Any alteration from the previous construction details should be taken into account.
- Ensure that you (or the contractor) are well conversant with the sequence of installation. Remember, aluminum curtain wall extrusions differ in design, so does their installation sequence.
- If you need to add any materials, ensure that they are equal or of superb quality.
- Check that you have the correct sealants and fasteners for the specific aluminum curtain wall extrusion.
- Lastly, ensure that you have the installation manual of the aluminum curtain wall extrusions you have purchased – follow it to the latter.

How Do You Ensure Your Aluminum Curtain Wall Extrusions Are Waterproof?

Water can enter the curtain wall system through five various forces: kinetic energy, surface tension, capillary difference, gravity, and pressure difference.

To prevent this, the aluminum curtain wall extrusion system design needs to account for all five forces. The system design comprises;

- Frame gaskets and weather stripping
- Interior sealants
- Seals and perimeter flashings
- Drainage and construction details

Ensuring water resistance in your aluminum curtain wall extrusion system is crucial since leaks can extend to the insulating glass window or the interior.

How Do You Ensure Condensation Resistance In Your Aluminum Curtain Wall Extrusions?

Condensation occurs on the aluminum surface or glass when the surrounding air's humidity comes into contact with a cold surface.

Consequently, the humidity changes from vapor to liquid.

Notably, the temperature at which condensation occurs is the dew point, determined using a psychometric chart.

In this case, we consider the dew point temperature of the indoor air.

The aluminum or the glass's surface temperature (outdoor temperature) should not be below the determined indoor dew temperature to prevent condensation.

What Are The Common Durability Problems Of Aluminum Curtain Wall Extrusions?

There are two common durability problems for aluminum curtain wall extrusions; sealant failure and window wall system failure.

Sealant Failure

The sealant mostly fails due to failure to design the sealant joint to accommodate shear forces resulting from differential thermal movement. In cases of sealant failure, water infiltration may arise.

A basic redress for this is to overlay the existing sealant with pre-cured silicone with at least a four times greater extension than the previous one.

Curtain Wall System Failure

In some cases, the waterproofing membrane of the curtain wall system can fail due to incompatibility with other sealants.

Depending on the design, the aluminum curtain wall extrusion can be repaired or be replaced entirely.

For example, an overlapping shingle design failure may warrant the complete replacement of the aluminum curtain wall extrusion.

Other durability problems will arise due to;

- Incorrect or poor installation
- Lack of sufficient testing on the aluminum curtain wall extrusion before purchase and installation

- Deficient sealants.

What Are The Emerging Issues In The Application Of Aluminum Curtain Wall Extrusions?

The usage of aluminum curtain wall extrusion continues rapidly in infrastructure development. This can be attributed to its unlimited recyclability and superb strength.

Notably, the upsurge in the aluminum curtain wall is expected to continue due to the need of weather control features for infrastructure developments.

What's more, the uptight regulations against carbon emission continue to create a wider market for aluminum curtain wall extrusions.

Current projections show that 73% of aluminum curtain wall revenue comes from the commercial sector. Nonetheless, the use of the aluminum curtain will still continue to double.

However, water and air leakages continue to curtail the adoption of aluminum curtain wall extrusions – mostly in construction projects.

How Do You Test Aluminum Curtain Wall Extrusions?

All the test specifications for aluminum curtain wall extrusions are outlined by the American Architectural Manufacturers (AAMA).

AAMA publishes the minimum standards pertaining the curtain wall quality and performance. The publication is referred to as the Methods of Test for Exterior Walls, AAMA 501-94.

The publication includes field and laboratory test specifications for aluminum curtain wall extrusion such as:

- Test specimens
- Methods
- Performance characteristics
- Recommended practices
- Testing procedures
- Test apparatus

The common AAMA tests are;

- AAMA 501.5 – Thermal cycling
- AAMA 501.1 – Dynamic water infiltration

- AAMA 501.6 – Seismic Drift Causing Glass to Fallout
- AAMA 501.7 – Vertical Seismic Displacement.

Apart from the AAMA tests, there are also ASTM tests for aluminum curtain wall extrusions. These include:

- ASTM E 283 – Air Infiltration
- ASTM E 331 – Static Water Infiltration
- ASTM E 330 – Structural testing

