

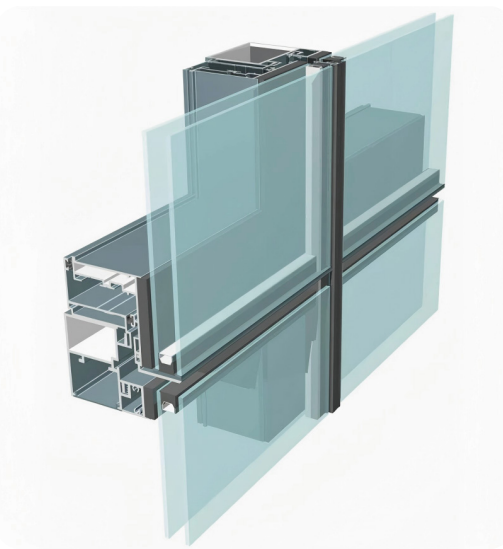
GLASS CURTAIN WALL SYSTEM

01

inspection report



Hidden framing glass curtain wall&exposed framing glass curtain wall

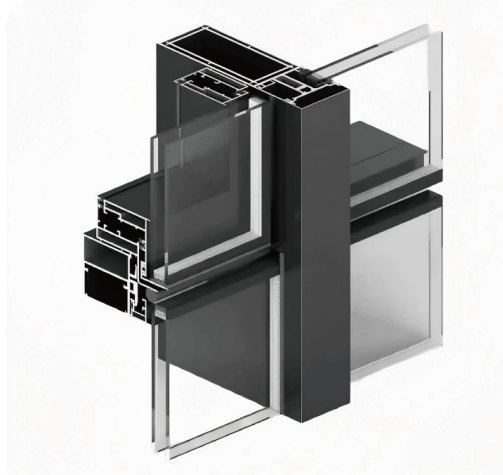


The main feature of component-type curtain walls is that all supporting structural materials are transported to the construction site in disassembled pieces and installed one by one on the construction site. It is currently the traditional curtain wall with the largest production scale and the most mature technology in the market.

According to the different forms of the external structure of the panel, it can be further classified as:

1. Hidden-frame curtain wall.
2. Semi-hidden frame curtain wall (a. horizontally visible and vertically hidden b. horizontally hidden and vertically visible).
3. Visible frame curtain wall.

Main Constituent Elements of Component-Type Curtain Wall



1. Connecting parts (embedded parts, connecting corner codes, etc.) connected to the main body.
2. Main load-bearing structure of curtain wall (columns).
3. Secondary load-bearing structure of curtain wall (beams)
4. Panel and frame connection system (pressure blocks, connecting angle aluminum, etc.)
5. Panel materials (classified by material performance and specifications)

Advantages and disadvantages of component-based glass curtain walls

ADVANTAGES

1. The process is mature and the construction difficulty is low.
2. Compared with unitized curtain walls, the construction cost is relatively low.
3. It is easy to disassemble, replace and maintain.

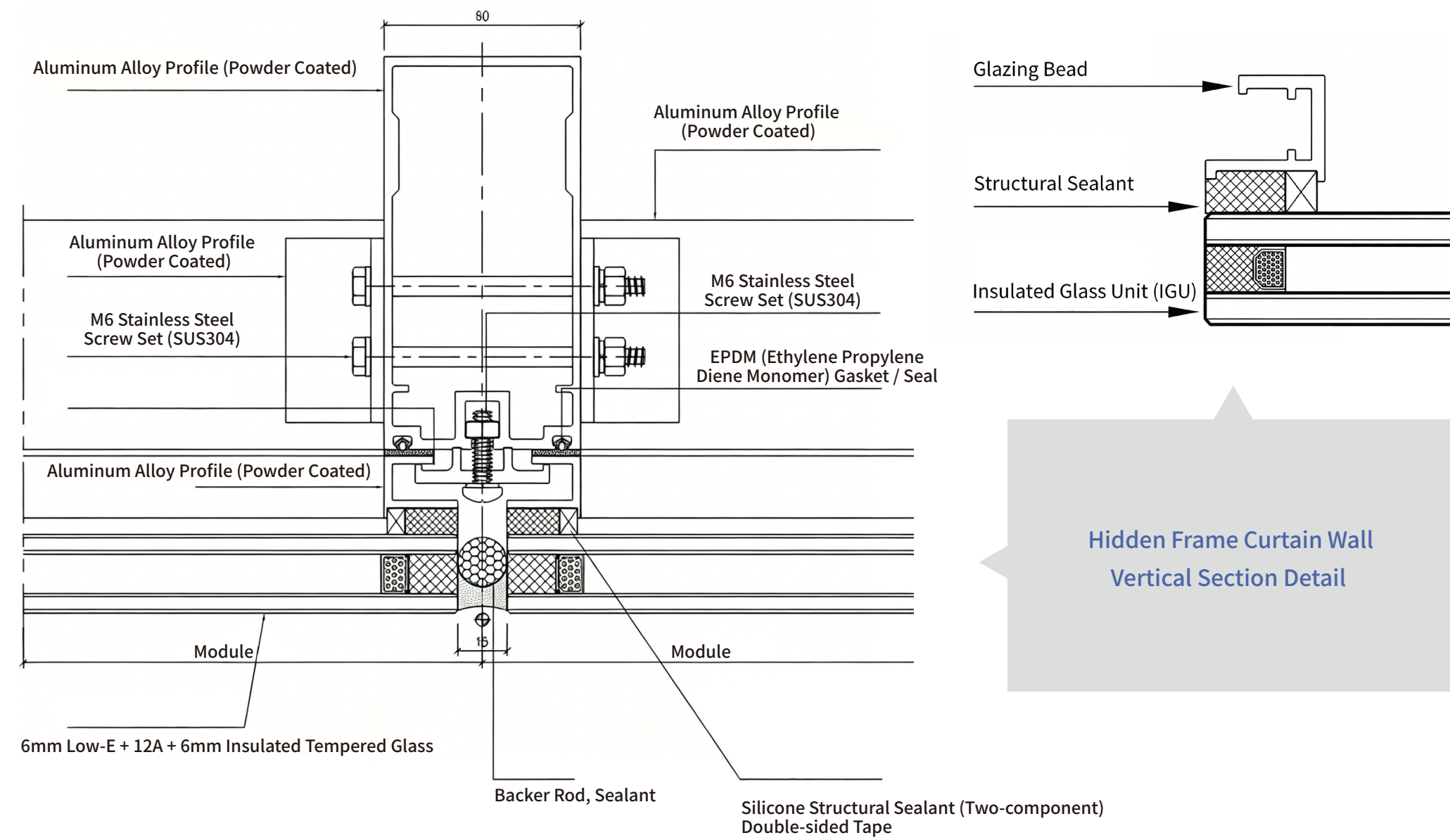
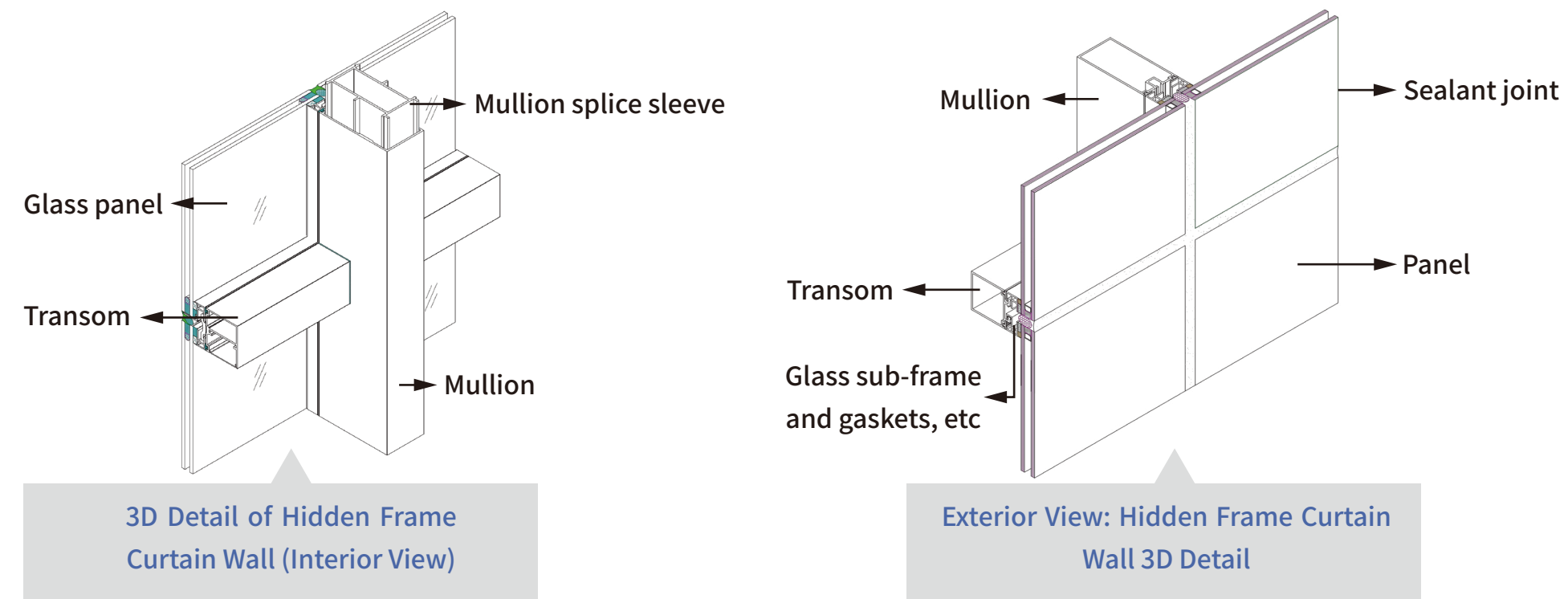


DISADVANTAGE

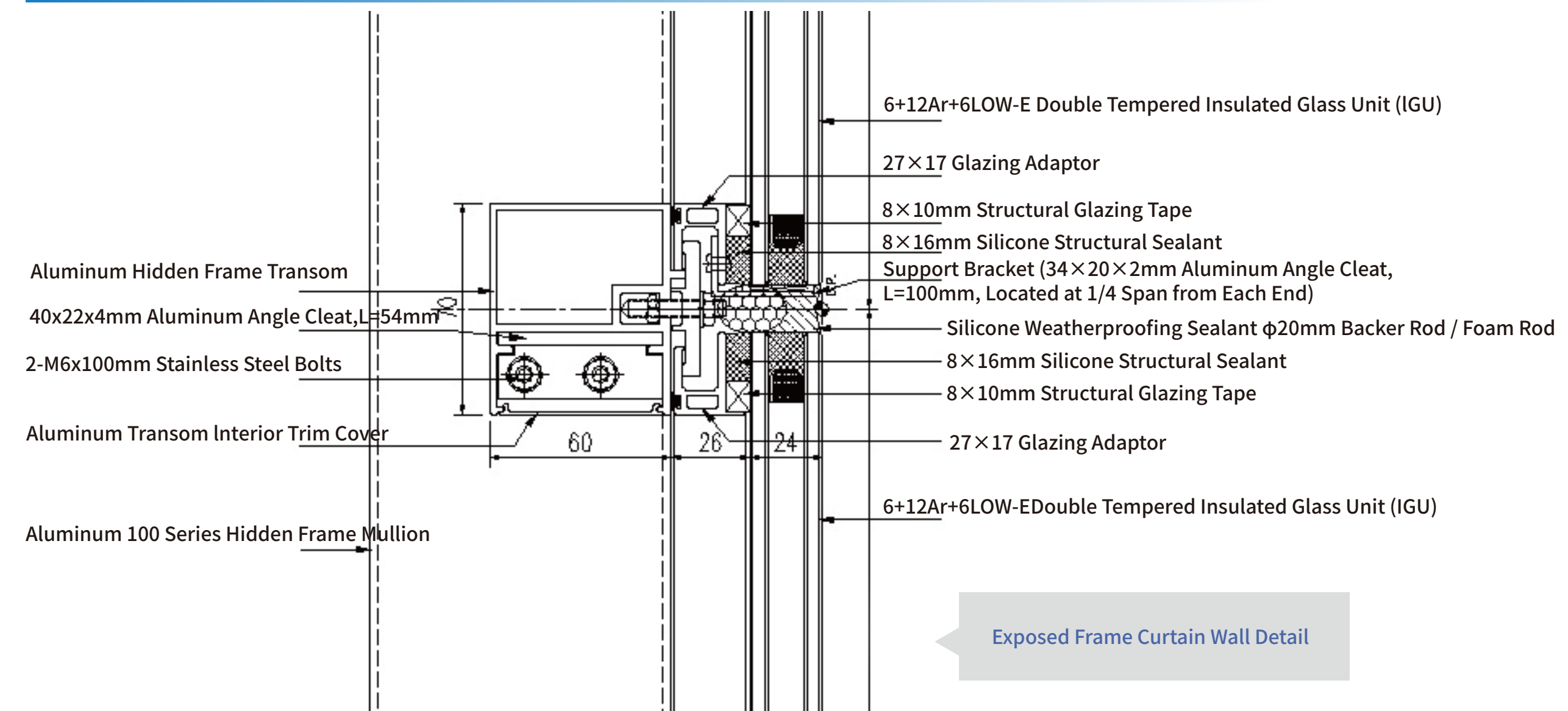
1. It occupies a large amount of on-site construction space (processing plants, material warehouses, etc.)
2. Compared with unitized curtain walls, the installation speed is relatively slow.
3. The on-site construction labor input is large.



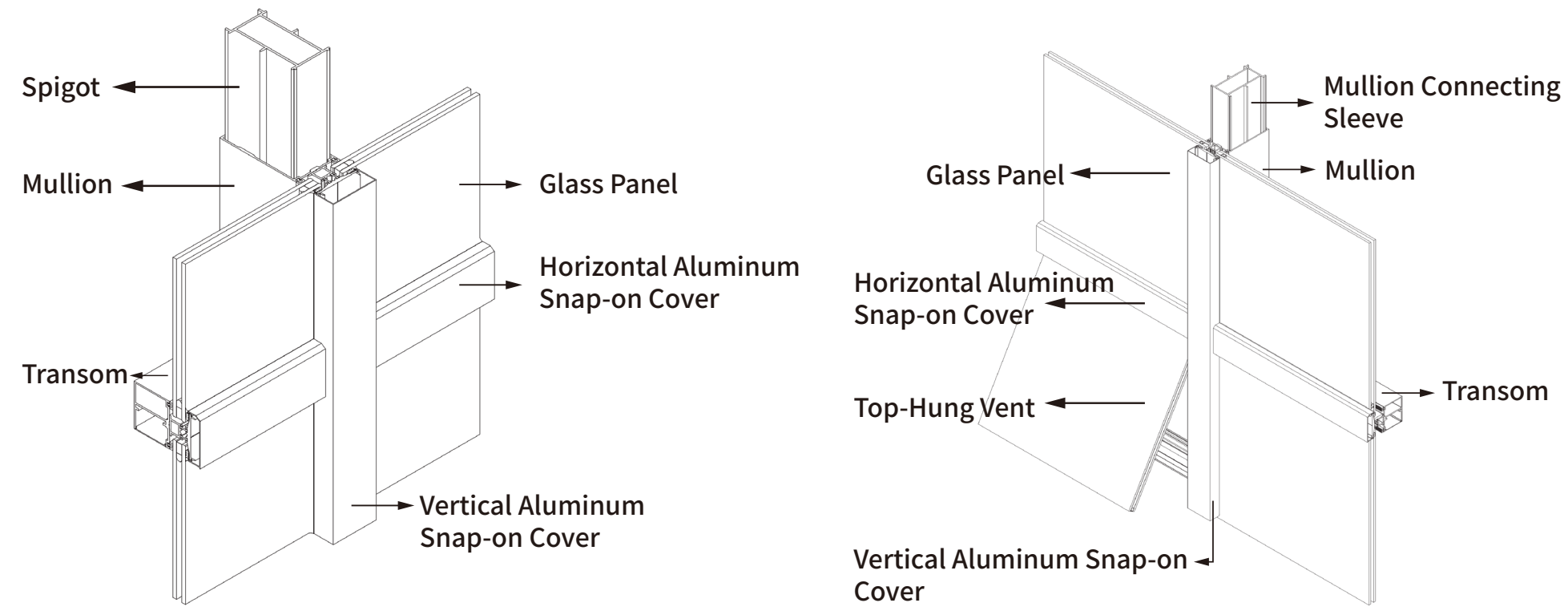
Detail Drawing of Hidden Frame Curtain Wall



Exposed Frame Curtain Wall Detail Drawing

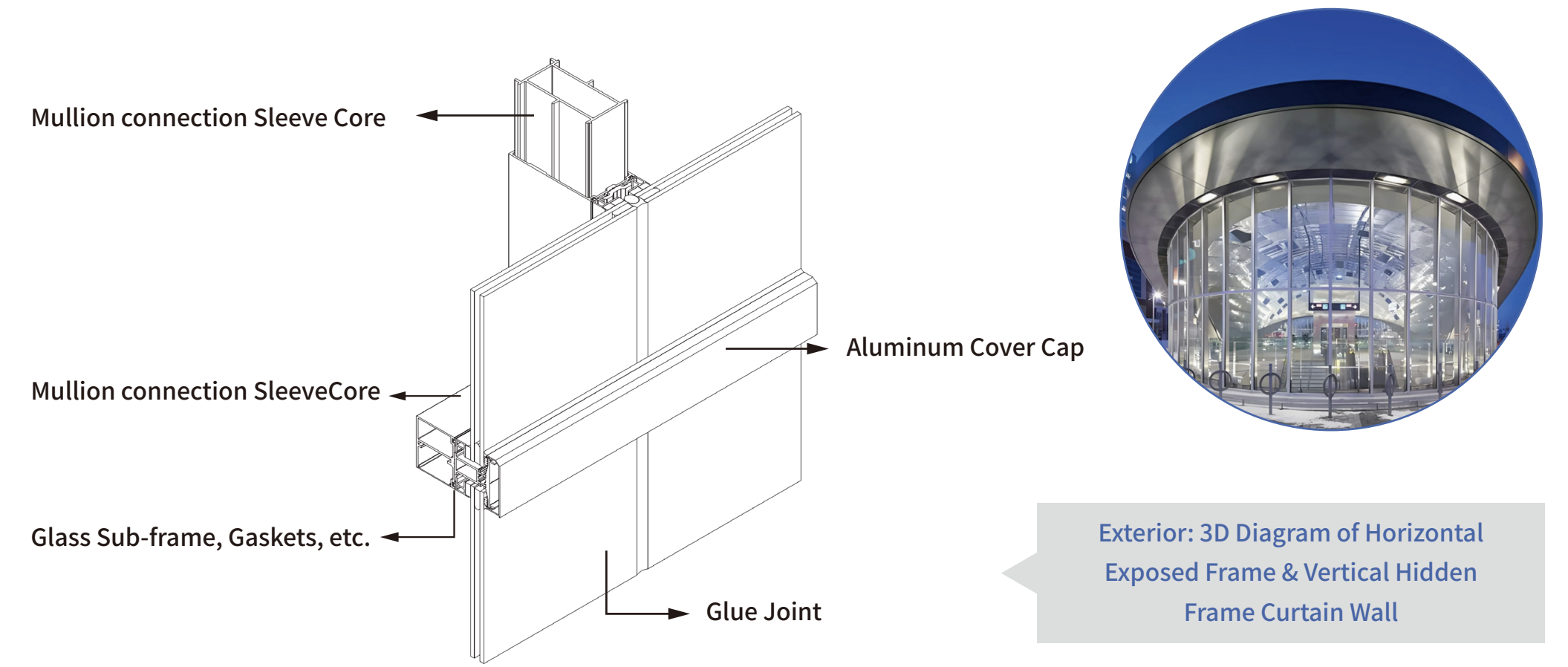


Exposed Frame Curtain Wall Detail Drawing

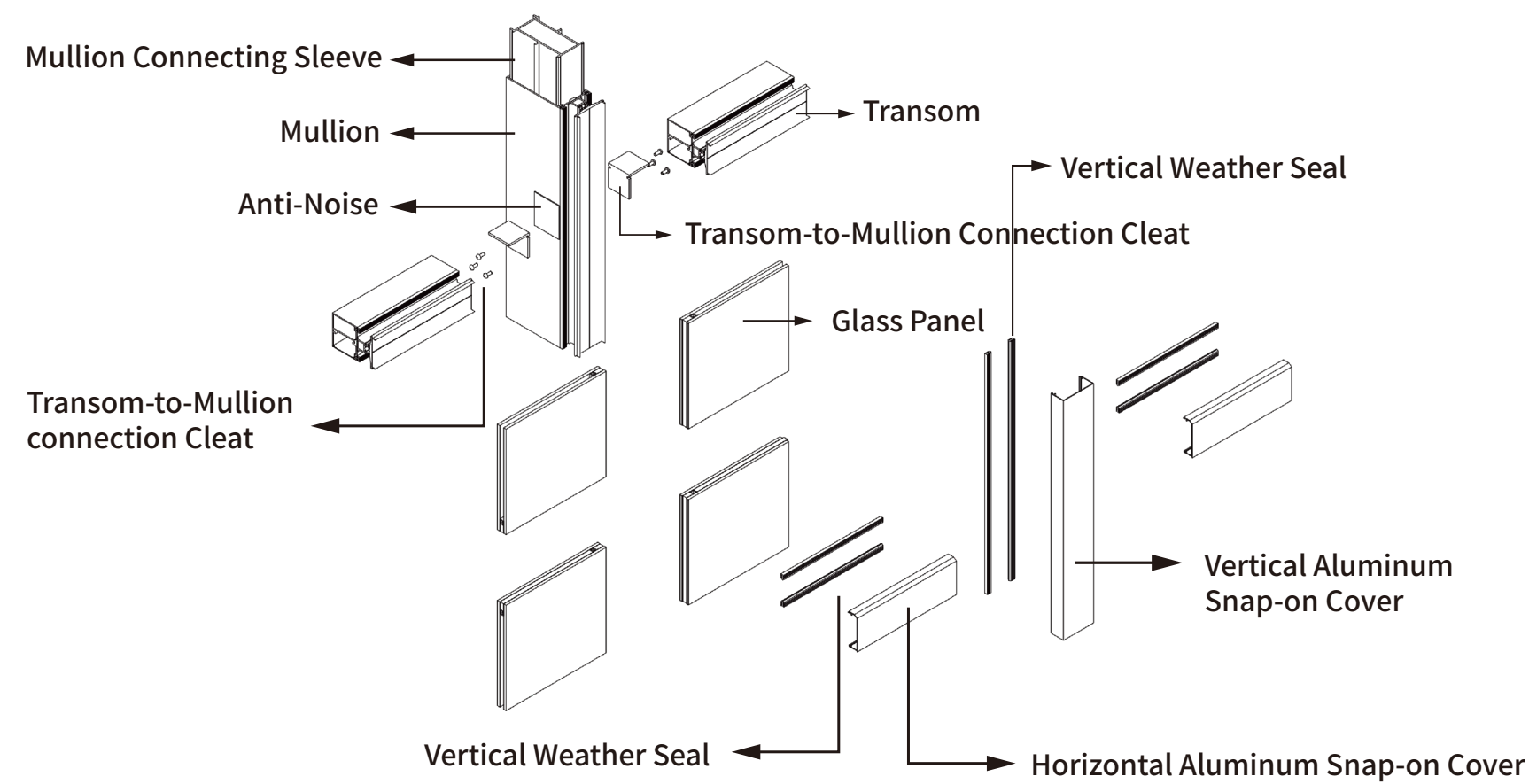


Exposed Frame Curtain Wall 3D Detail (Exterior View)

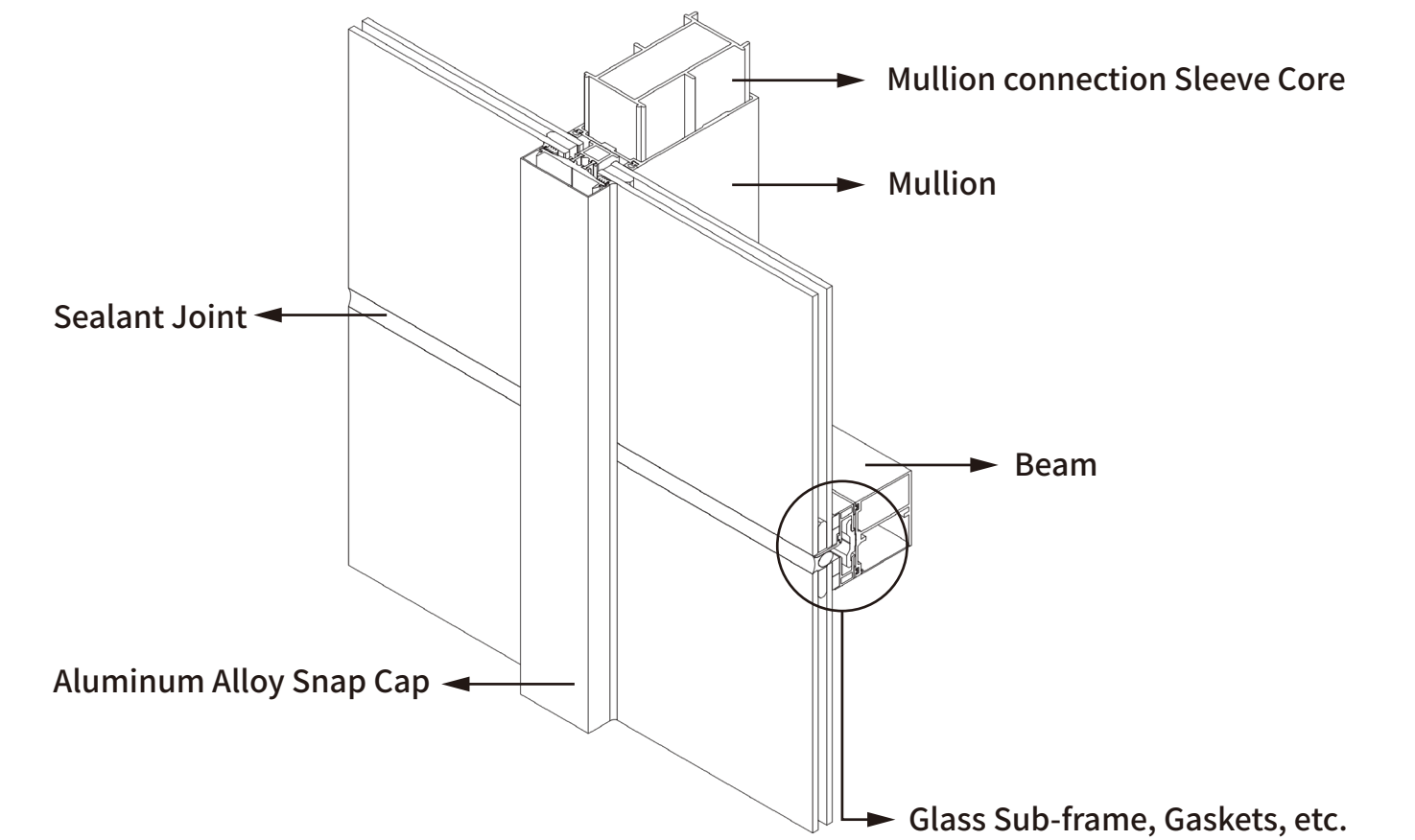
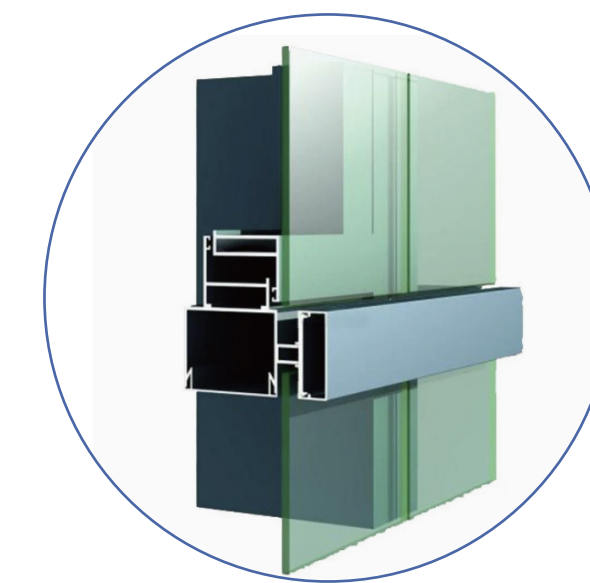
Exposed Frame Curtain Wall 3D Detail (with Opening Vent)



Exterior: 3D Diagram of Horizontal Exposed Frame & Vertical Hidden Frame Curtain Wall



Exposed Frame Curtain Wall Assembly Diagram



3D Diagram of Horizontal Hidden Frame & Vertical Exposed Frame Curtain Wall

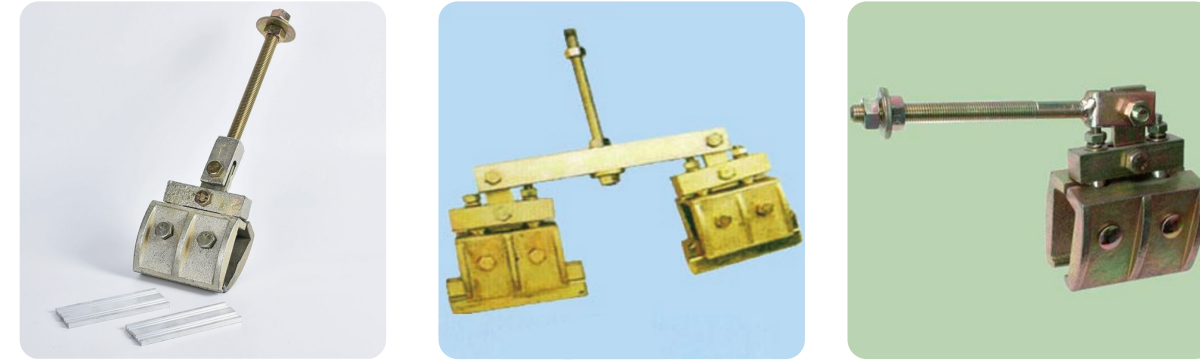
All-glass curtain wall series



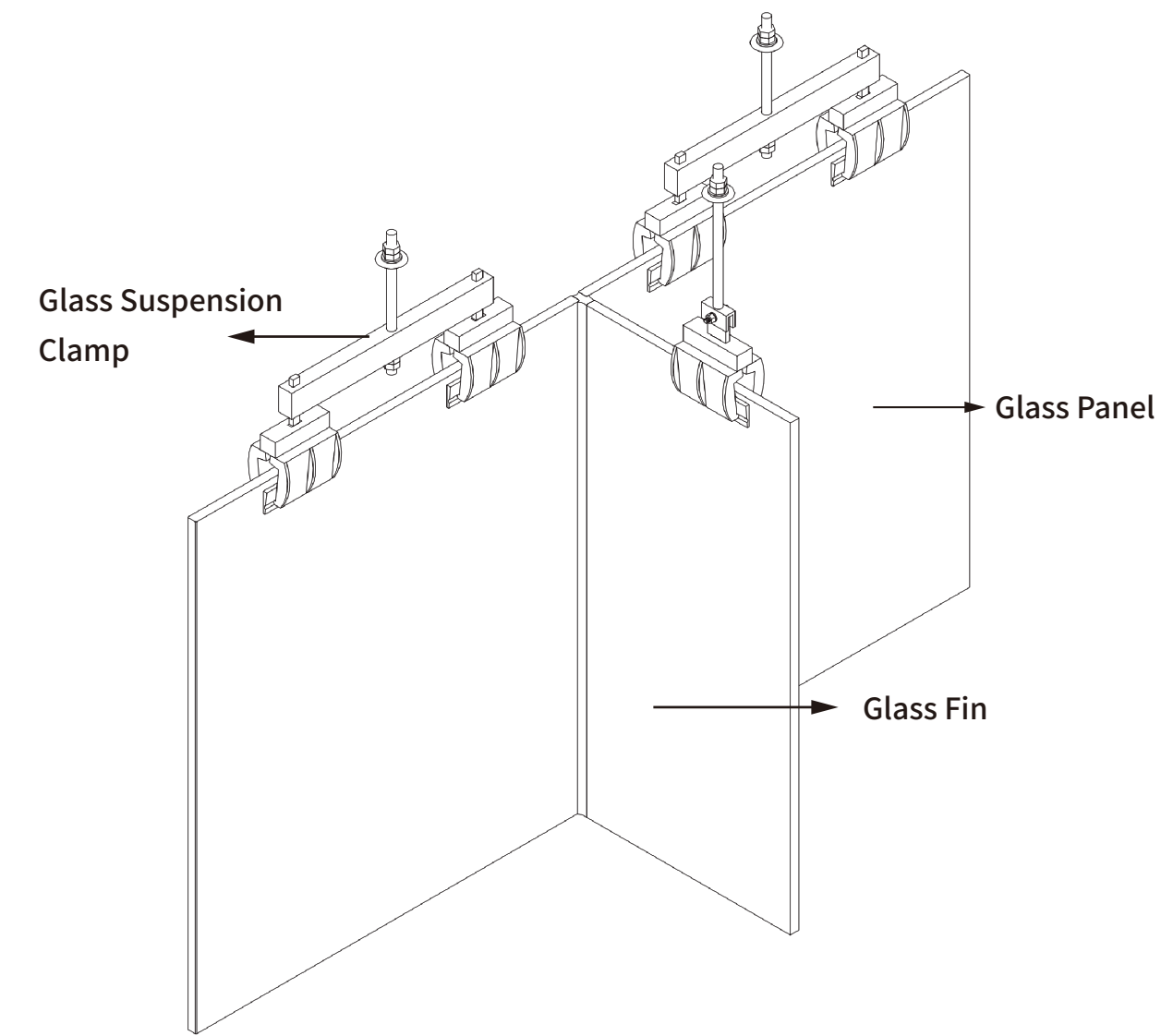
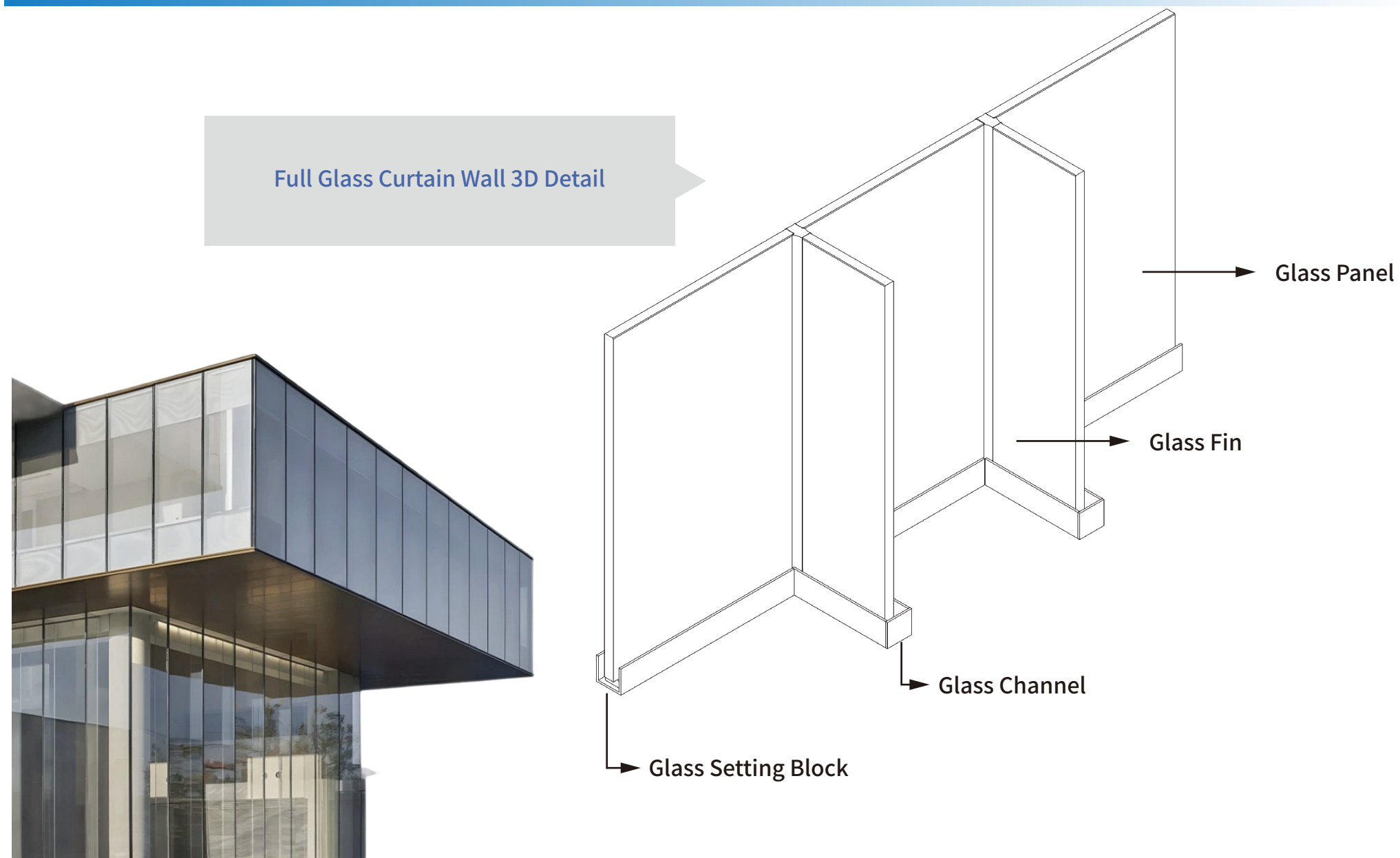
All-glass curtain walls refer to those where both the panels and the supporting structure are composed of glass.

According to the different installation forms of the panels, they can be classified as:

- Floor-standing
- Hanging type



Full Glass Curtain Wall Detail Drawing



Full Glass Curtain Wall 3D Detail



Application Areas of Full Glass Curtain Wall

Unitized curtain wal



Unitized curtain walls are also a type of frame-supported curtain wall. Their main feature is that the curtain wall facade is divided into several independent unit panels. Each unit panel is processed and assembled in the factory, and the entire unit panels are transported to the construction site. At the construction site, only necessary pane assembly and adjustment are needed to complete the process.

ADVANTAGES

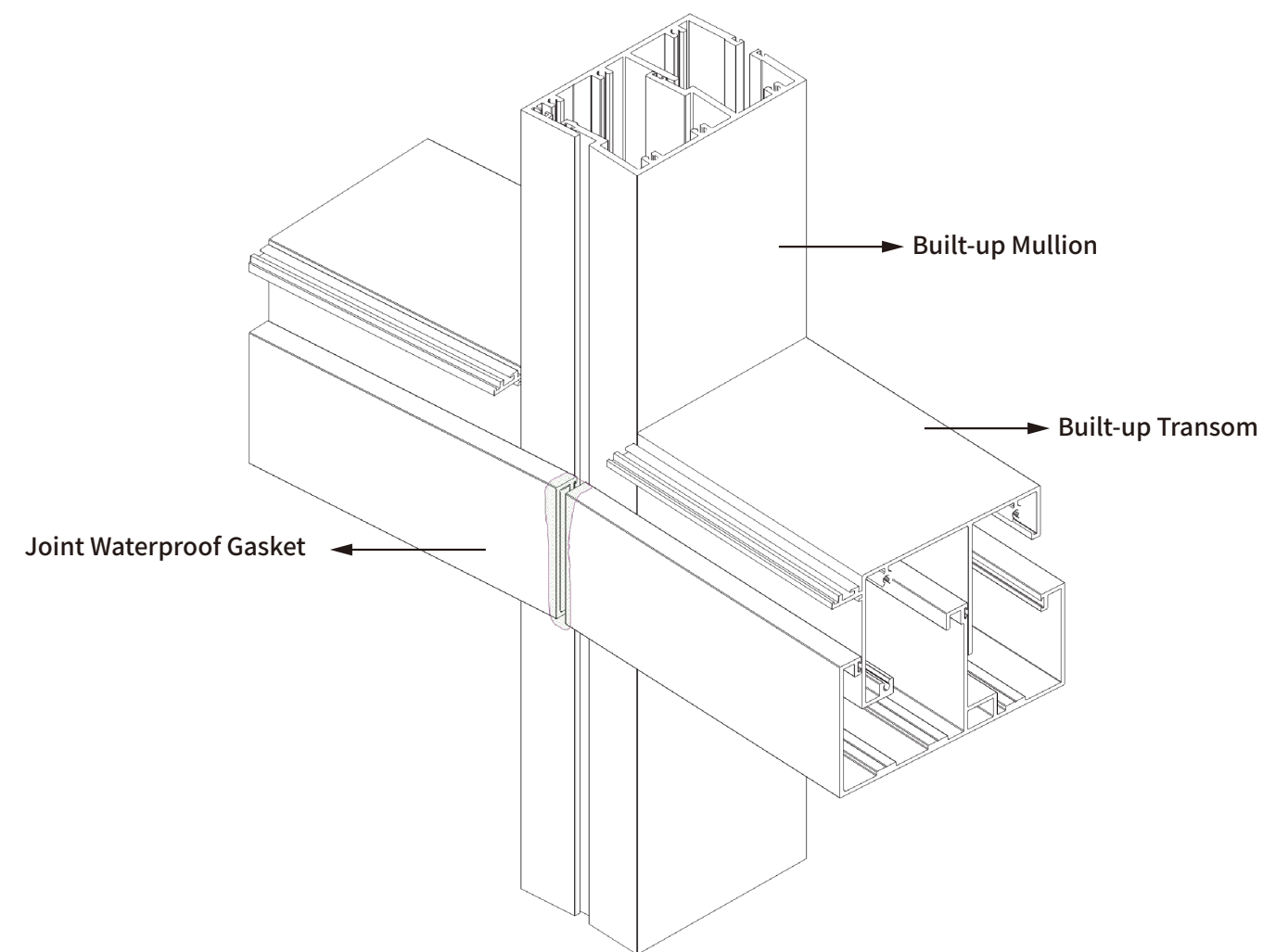
The processing accuracy of the panels is high, the workload on the construction site is small, and the installation time is short, which is convenient for catching up with the schedule.



DISADVANTAGE

Apart from the price, it has no flaws.

Unitized Curtain Wall Detail Drawing



Unitized Curtain Wall System Assembly

Unitized Curtain Wall Installation Sequence: Panels Installed from Bottom to Top

Electric Hoist

Unit Panel 4

Embedded Part, Adaptor

Unit Panel 3

Unit Panel 2

Aluminum Alloy Hanger

Structural Work

Unit Panel 1

This composite image illustrates the installation process of a unitized curtain wall. On the left, a tall building facade shows the grid of window panels. A circular inset at the top right shows a close-up of an electric hoist lifting a panel into place. Below this, a detailed cross-section diagram shows the assembly of four unit panels (labeled Unit Panel 1 to 4) being attached to a structural work frame. The diagram identifies key components: Unit Panel 1 at the base, Unit Panel 2 and 3 in the middle, and Unit Panel 4 at the top. An Aluminum Alloy Hanger is shown connecting the panels to the Structural Work. An Embedded Part, Adaptor is also visible in the joint between panels.

Glass Curtain Wall Technical Parameters Table

Parameter Category	Specific Item	Technical Parameter / Classification	National Standard / Code Requirement	Remarks (Design / Procurement Reference)
Glass Material	Tempered Glass	Thickness >6mm; Surface stress >90MPa	JGJ 102,GB/T 21086	Mandatory for area > 1.5m or buildings above 7 floors
	Heat-Strengthened Glass	Surface stress 24~69MPa	JGJ 102,GB/T 21086	Optional; lower strength than tempered glass
	Laminated Glass	Total thickness > 8mm; PVB/SGP interlayer 2 0.76mm (≥1.14mm for point-supported)	JGJ 102,GB/T 21086	High impact resistance; suitable for high traffic areas
	Insulating Glass	Air space 6~20mm; Dew point ≤ -40°C; Dual seal	JGJ 102,GB/T 21086	Preferred option; balances energy saving and sound insulation
	Full Glass Curtain Wall Glass	Panel >10mm, Fin Glass ≥12mm	JGJ 102	For full glass design without supporting frame
	Visible Light Reflectance	≤ 0.30 (≤ 0.16 for heights below 20m)	JGJ 102 (Light Pollution Control)	Avoid light pollution; comply with urban planning requirements
	Visible Light Transmittance	0.3~0.7	Per energy-saving design requirements	Adjust based on building daylighting needs
	Shading Coefficient (SC)	0.2~0.8	Energy-saving design codes	Lower SC value preferred in southern regions
	Heat Transfer Coefficient K-Value (Standard Insulating Glass)	2.5 ~ 3.5 W/(m²·K)	Energy-saving design codes	Basic energy-saving configuration
	Heat Transfer Coefficient K-Value (Low-E Insulating / Gas-filled)	Low-E Insulating: 1.5~2.2 W/(m²·K); Gas-filled: 1.1~1.8 W/(m²·K)	Energy-saving design codes	High-end energy-saving configuration; highly recommended
Supporting Structure (Aluminum/Steel Profiles)	Aluminum Alloy Profiles (Openable Parts)	Wall thickness ≥3.0mm	GB/T 5237	Ensure structural strength
		Wall thickness >2.5mm	GB/T 5237	Ensure structural stability
	Aluminum Alloy Profiles (Closed Sections)	Anodizing (film thickness ≥10μm); Fluorocarbon Spraying (≥40μm)	GB/T 5237	Fluorocarbon coating offers better weatherability; suitable for outdoor use
	Steel	Carbon Steel (Q235B, wall thickness ≥3.0mm, hot-dip galvanized); Stainless Steel (SUS304/316)	JGJ 102	Stainless steel resists corrosion; suitable for humid/coastal areas

Parameter Category	Specific Item	Technical Parameter / Classification	National Standard / Code Requirement	Remarks (Design / Procurement Reference)
Core Physical Performance	Wind Load Resistance	Grade 1~9 (P_w: 1.0~5.0 kPa); Deflection ≤ L/180 and ≤20mm	GB/T 21086	Higher grades required for high-rise buildings or typhoon zones
	Air Permeability	≥ Grade 3; Operable: q ≤ 0.5 m³/(m²·h); Overall: q ≤ 0.5 m³/(m²·h)	GB/T 21086	Ensures energy efficiency and sealing effectiveness
	Water Penetration Resistance	Typhoon area: fixed parts ≥1000Pa; Non-typhoon area: ≥700Pa	GB/T 21086	Prevents rainwater leakage; enhanced performance required in typhoon zones
	In-plane Deformation (Seismic)	Grade 1~5 (Inter-story drift angle 1/300~1/100); Seismic ≥1/200	JGJ 102	Seismic regions must meet corresponding seismic grade requirements
Sealant & Structural Adhesive	Sound Insulation	Weighted sound reduction index R _w : 25~35 dB (Up to 30~40dB for insulating glass)	GB/T 21086	Insulating glass preferred for areas with high acoustic requirements
	Structural Silicone Sealant	Bond width and thickness ≥6mm for hidden/semi-hidden frames; Compatibility and peel tests required	JGJ 102	Critical bonding material; must comply with national standards
	Weatherproof Silicone Sealant	Joint width ≥3mm, depth ≥2mm; Movement capability ≥20%	JGJ 102	Ensures long-term weather seal and accommodates thermal movement
Fire Safety & Protection	Inter-story Firestop	1.5h fire-rated seal; 1.5mm galvanized steel sheet + fireproof mineral wool	JGJ 102, Building Fire Protection Code	Must meet fire inspection acceptance requirements
	Impact Resistance Performance	Public buildings ≥ Grade 2 (300 N·m)	GB/T 21086	High-traffic areas must comply with the corresponding grade
Typical Reference for High-rise / Public Buildings	Safety Glass Requirements	Tempered, Laminated, Homogeneous Heat Soaked (HST)	JGJ 102, Building Safety Glass Regulations	Use of ordinary glass is prohibited to ensure safety
	Comprehensive Configuration	Glass: 6+12A+6 Low-E insulated tempered; Profiles: Aluminum mullion ≥ 180 series, wall thickness 3.0mm; Performance: Wind resistance Grade 7 (3.5 kPa), Air permeability Grade 3, Watertightness 1000 Pa, K-value ≤ 2.0	JGJ 102, GB/T 21086	General configuration; can be adjusted based on project requirements