

Frameless Spider Commercial Facades (Assemblies)

Spider Fittings are the stainless steel hardware for mounting glass to walls, posts, fins, or other structural substrates. Typical Types of spider fittings can be divided into Fin Spider fittings and Point Fix Spider fittings.



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PRODUCT OVERVIEW

Frameless Spider Commercial Facades (Assemblies)

Ideal for creating an “all glass” look, Spider Fittings are designed for mounting to walls, posts, fins or other structural substrates with minimal visible connections. Holes must be drilled in the glass for assembly.

Metro Frameless Glass stock a range of Spider fittings. The fixing detail can be tailored for individual projects including side fixed, bottom fixed or top mounted fittings to meet the requirements of small canopies through to more complex glass walls.

All Spiders Fittings are manufactured from 316 stainless to maximise durability and appearance, in polished or satin finishes. Swivels are available for toughened, laminated or double glazed units, including flush fitting and surface mounted options.





Guidance Notes for Frameless Spider Commercial Facades

Glass walls overcome the restrictions of conventional frames to provide the ultimate all glass façade. They use proprietary mechanical fixings and toughened safety glass and combine strength and visible lightness to provide high performance window façade systems.

Glass is secured to a support structure by a variety of fitting options which are designed to meet the unique requirements of the project. These fixings absorb forces when the glass is under load and provide a secure connection between the glass component and support structure.

Types:

Ground Based Assemblies

- ▶ Conventional toughened glass door entrance systems are the basic form of ground based assemblies, where the glass dead load is supported by the floor. They can be designed with or without doors and are normally a maximum of two tiers and 6 metres high, requiring lateral support from glass fins or a steel structure.

Fully Fixed Assemblies

- ▶ For these systems the individual panels are normally fixed directly to the support structure, which can be steel, masonry or any other suitable structure. Normally the panes are fixed at the corners and the structure is designed to accommodate building movement at the perimeter.

Suspended Assemblies

- ▶ The suspended assembly is the most versatile structural glass system and can be hung up to 20 metres in height. The adjustable suspension system in conjunction with perimeter channels permits the system to move independently of the building structure. This compensates for construction dimensional variations and overcomes problems associated with building movement, vibration and seismic loads. The

glass façade is hung from the building structure like a curtain. The top tier panels are connected to the structure by adjustable hanger brackets and subsequent lower panels are connected by special fittings at their corners. The façade is located into channels at the perimeter and all glass joints and channels are sealed with silicone sealant. The hanging assembly is normally stabilised against wind load by glass fins located and fixed to the support structure with fixings at the joints.

Tension Rod Systems

- ▶ The SpiderTruss tension rod façade system is designed with spider point fixed glass and high tension stainless steel rod in the form of vertical or horizontal trusses as wind bracing. The tension rod truss system utilises two pre-stressed catenaries that carry inward and outward wind loading. Loads are transferred from the glass through countersunk point fixings and spiders to the compression struts. The dead load of the glass is carried by suspension hangers to the top hung vertical tension rods connected to the spiders. The truss junctions consist of a combination of machined and cast stainless steel components. The trusses are tensioned between the concrete or steel structure and the systems pre-tension loading and sizing of the tension rods is determined from the thermal load, creep, seismic and wind loading conditions to the building.

Glass Fin Support

- ▶ Typical glass fins can be fixed to metal mullions, trusses, space frames or other support structures for lateral support.

Glass Design

- ▶ Glass wall design can be complex and depend on design loads, seismic movements, support structure and glass support method therefore specific design by our Technical Dept is required.

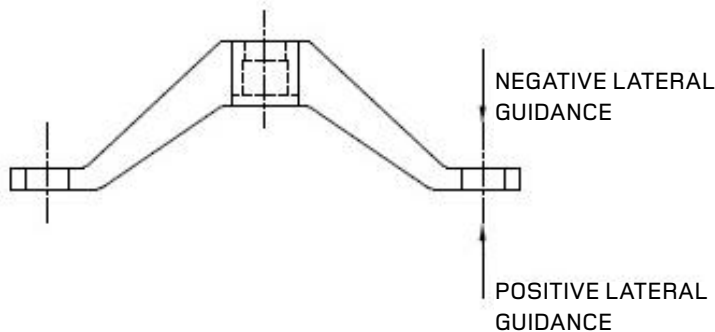
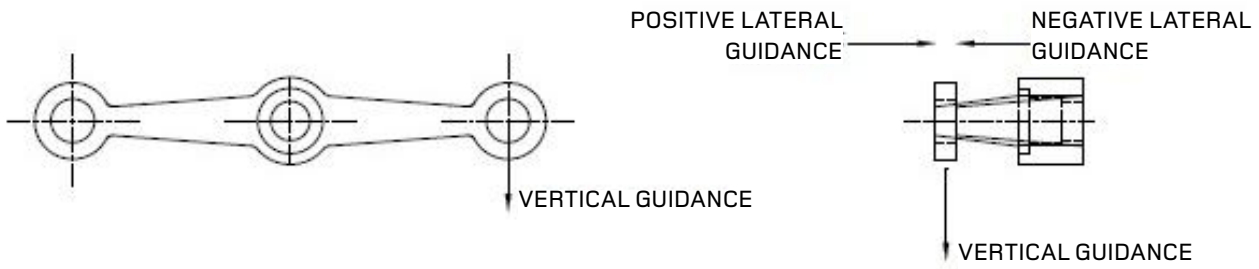
Austvision 443 & 446 Spider Load Guidance Table

DESIGN GUIDANCE FOR SPIDER FITTING

Confirmed by Independent University Laboratory Tests

(Fy = 220 Mpa) Includes 2.0 factor of safety

SPIDER FITTING	LATERAL GUIDANCE (POSITIVE WIND LOADING)		LATERAL GUIDANCE (NEGATIVE WIND LOADING)		VERTICAL GUIDANCE	
	LOAD PER ARM (KN)	DEFLECTION PER ARM (mm)	LOAD PER ARM (KN)	DEFLECTION PER ARM (mm)	LOAD PER ARM (KN)	DEFLECTION PER ARM (mm)
Light duty balustrade fittings						
443/2	2.1	0.3	1.6	0.3	1.6	0.1
443/4	1.0	0.2	0.8	0.3	1.8	0.2
Heavy duty structural glass fittings						
446/2M	4.0	0.9	3.5	1.2	3.8	1.0
446/2M	2.6	1.6	2.3	1.8	3.0	2.5



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SPIDER FITTING	LATERAL GUIDANCE (POSITIVE WIND LOADING)		LATERAL GUIDANCE (NEGATIVE WIND LOADING)		VERTICAL GUIDANCE	
	LOAD PER ARM (KN)	DEFLECTION PER ARM (mm)	LOAD PER ARM (KN)	DEFLECTION PER ARM (mm)	LOAD PER ARM (KN)	DEFLECTION PER ARM (mm)
Light duty balustrade fittings						
444/2	2.7	0.6	2.2	0.7	1.5	0.5
444/4	2.0	0.3	1.6	0.5	2.3	0.7
Heavy duty structural glass fittings						
445/4M	4.0	3.4	3.6	2.2	1.4	2.8
445/4M	2.0	2.2	2.0	4.2	2.2	2.3

