

AUSTVISION Spider Fittings Specifications

Project Specification

Spider fittings and glass assembly connections shall be AUSTVISION brand by Metro Frameless Glass (MFG) Systems

Project Application

AUSTVISION spider fittings are suitable for all forms of structural glass applications using Toughened Safety Glass, Toughened Laminated Safety Glass and Toughened Insulating Glass Units (IGUs) such as;

- Suspended Glass Assemblies
- Ground Based (stacked) Assemblies
- Fully Fixed Assemblies
- Glass Fin Assemblies
- Tension Truss Assemblies
- Spider Frame Assemblies
- Spider Canopies (over or under slung)
- Tension Rod Canopies
- Balustrade Infill Panels
- Floors and Treads

Product Specification

Spider Body: 443, 444, 445M, 446M Series

AUSTVISION spider fittings are manufactured by the lost wax casting process in 316 grade stainless steel with a tensile strength of approximately 600MPa.

Material Compliance certificates from the ISO 9001 certified factory, in accordance ASTM AISI 316 -UNS S31600, are supplied with each casting run and available on request. These record the grade, finish, chemical analysis, and mechanical test data.

The spider arms are designed to support lateral wind loading and vertical dead load as per the design tables attached.

The spider design allows for flex in the arms and reduces the stresses around the glass holes. They are available in a range of configurations, typically 4 way, 2 way, 3 way and 1 way arm connections. Special single point connections are available and designed to match the profile of the spider and/or fixing.

Glass Assembly Connections (fittings)

The AUSTVISION spider assembly is supplied complete with a range of glass connection fittings to suit the application such as;

- M8 Countersunk Fixing
- M8 R35 Disc
- M10 Countersunk Fixing
- M10 RA 50 Disc
- M10 FP60 Disc
- M14 Swivel – 60/22-22n - 60mm diameter Profiled Disc
- M14 Swivel – 60/22-42n - 60mm diameter Profiled Disc
- M14 Swivel – 32/22-22n - Countersunk fixing
- M14 Swivel – 32/22-37n - Countersunk fixing

Note Refer Catalogue drawing on combined fixings

The M10 fixings and the M14 articulated swivels, including the AGA round head nuts and washers are manufactured from 316 grade stainless steel with machined screw threads complying with ISO965/1 metric M thread profile. Two snake eye holes are provided in the 60mm discs of the swivels to ensure the correct tightening torque can be achieved. The M8 and M10 fixing use hex slots to tighten.

The AUSTVISION articulated swivel fitting is designed to reduce stress concentration and stress build-up around the glass hole and in particular to reduce bending stress at the

corner of the glass panel on a point supported system. The swivels can accommodate glass up to 43mm in thickness. They have been tested and are able to resist maximum loads of up to 19kN in any direction.

Swivel fittings are manufactured from 316 grade stainless steel, with tensile strength of 600MPa, yield strength of 220MPa, and M14 external thread complying with BS 3643.

The fittings are protected from direct contact with the glass by either non compressible vulcanised fibre gaskets (0.8 to 1.0 mm thick) or Nylon gaskets. Gaskets are black in colour, which gives the gasket maximum ultra violet light protection. The fibre gaskets are manufactured to conform to the Japanese standard JIS C2315.

The glass hole is insulated from the screw by UV resistant Nylon 66 bushes.

AUSTVISON - IGU Airspace Donut

AUSTVISON Donuts used in IGUs are designed to be UV resistant with a minimum guaranteed service life of 10 years. The Donuts must fit the airspace and remain perfectly sealed, with no moisture penetration. The Donuts have been tested to be hermetically sealed flat, conforming to British Standards BS 5713:1979. (EN1279)

AUSTVISON Donuts have been tested by an authorised testing laboratory to conform to:

1. American Standards ASTM E-773 "Standard Test Method for Accelerated Weathering (Durability) of Sealed Insulating Glass Units",
2. American Standards ASTM E-330 "Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure",
3. American Standards ASTM E-1233 "Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors by Cyclic Static Pressure."

Glass Design & Glazing

Toughened Safety Glass for structural glazing should normally have a surface compressive stress of 100MPa or more and this may subject to specific design. Heat Soaked Toughened Safety Glass is recommended, and required by some codes and specifications.

The AUSTVISION articulated head swivel fitting is designed to reduce the stress concentration around the glass hole by reducing bending stress at the corner of the glass panel on a point supported system

The Spiders are suitable for unframed toughened and toughened laminated assemblies which conform to Glass in Building Standards, NZS 4223.1:2008 section 5.5 and AS 1288-2006, which state “the design shall be such that breakage of any component of the assembly will not initiate progressive collapse of the remainder of the system”.

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