

Curtain wall

MX SYSTEM



MX – The Complete Suite



■ MX – A Complete Curtain Walling Suite

MX is a complete curtain walling suite, offering specifiers enhanced thermal performance to meet the most stringent building regulations, and a choice of highly flexible aesthetic options from a single system.

A variety of curtain wall applications are available using the same transom and mullion grid, giving specifiers the opportunity to vary the appearance of the building envelope, with all the design and construction benefits of one fully integrated system.

This approach successfully balances the creative and visual requirements of architects with the functional needs of contractors, developers and occupiers, simplifying specification, fabrication and installation to ensure the highest quality and cost efficiency.

Designers also have the benefit of consistent site lines and interfaces across a project – whether the requirement is for low to high rise curtain walling, and ribbon, structural, beaded and sloped glazing.

Balancing Aesthetics with Functionality

MX has all the aesthetic, durability and low maintenance qualities of aluminium, and combines innovative technology and construction features with advanced manufacturing techniques for quality installation and long-term performance.

The system is the result of Technal's ongoing product development programme and has been rigorously tested to BS EN standards for wind resistance, water tightness and air permeability.

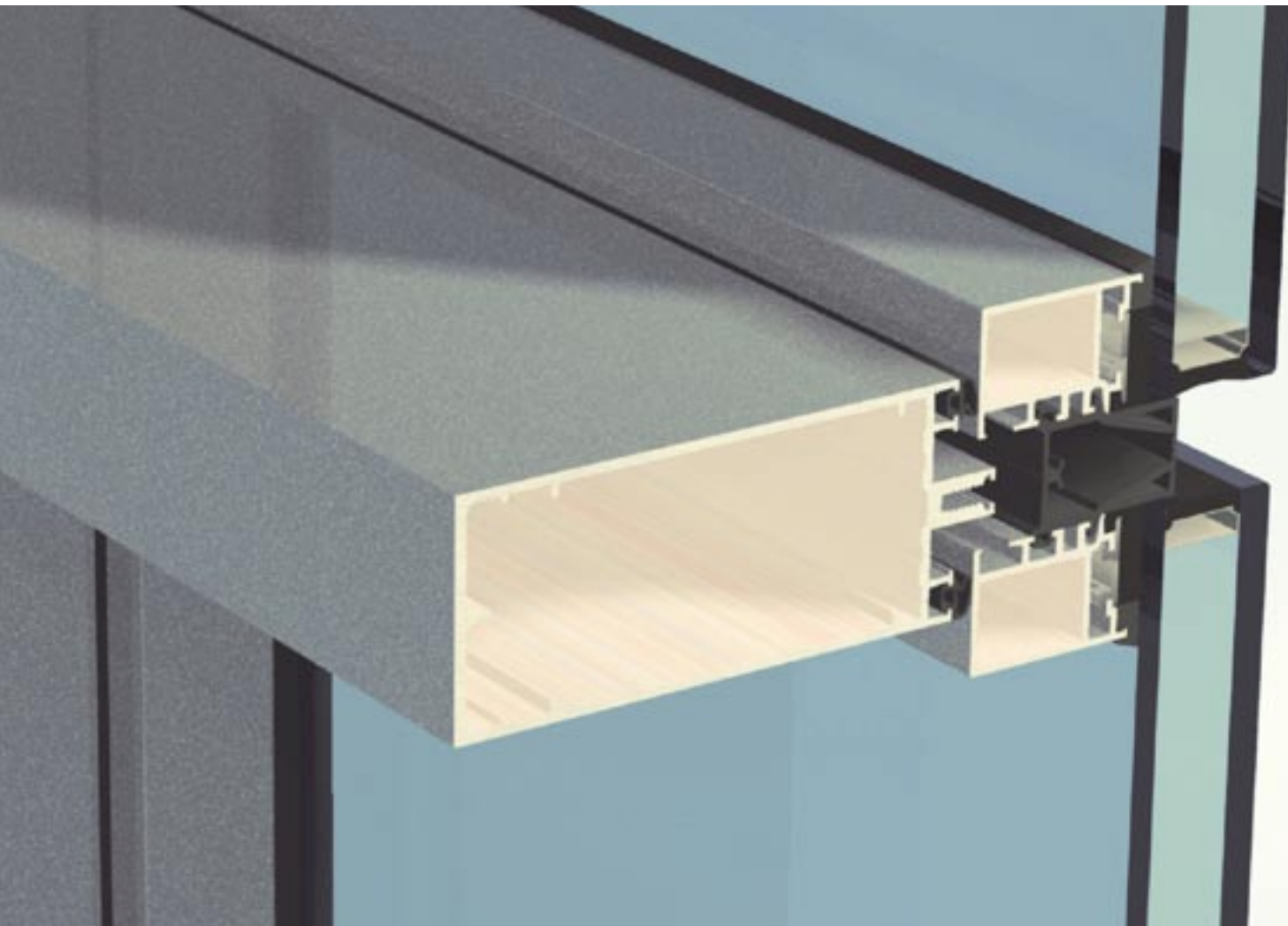
MX is fully compatible with Technal's portfolio of casement windows and doors, and can be used to create a wide variety of architectural compositions.

Design options include:

- High to low rise curtain walling
- *MX Trame* for horizontal or vertical emphasis
- *MX SSG* structural sealant glazing
- *MX BG* beaded glazing
- Sloped and faceted façades
- Atrium roofs
- Ribbon glazing
- Concealed vents.



MX – The Complete Suite



Features

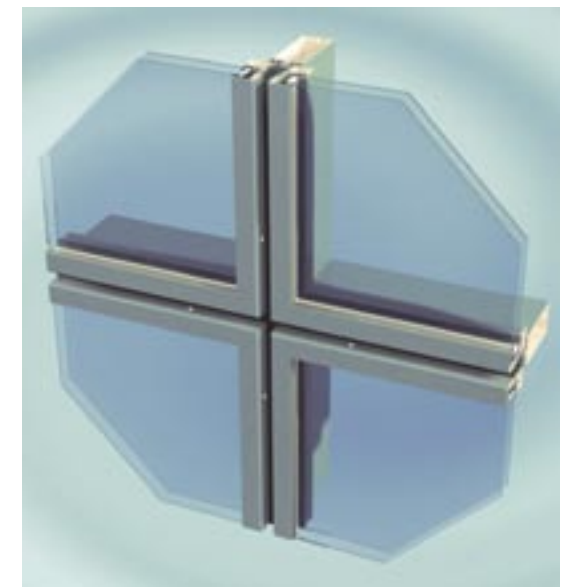
- Slim, constant 52mm sight lines for the mullion and transoms for visual consistency across a project
- Excellent thermal performance to achieve low U values
- A technically advanced framing system which uses high quality components for long-term durability
- Intelligent design to ensure the quality of fabrication and installation
- A choice of depths up to 240mm for structural members, to meet individual project requirements and ensure cost efficiency
- Fully compatible with Technal's FXi, PXi and GXi window and door suites
- The option of concealed vents in a variety of configurations
- A range of shaped caps for further design flexibility
- The system can carry glazing units or insulated infill panels.

Construction

- The mullions and transoms are square cut and assembled using a combination of factory-fitted cast face-fixed junction spigots and concealed anti-rotation spigots, or by transom blocks. This robust construction offers ease of fabrication, greater accuracy and enhanced stability
- The mullion jointing uses a specially designed sleeve spigot for each mullion for a high quality joint
- All machine operations can be performed on drill jigs with punch tooling for drainage, to reduce fabrication time and cost, and achieve consistent quality.

Weather Performance

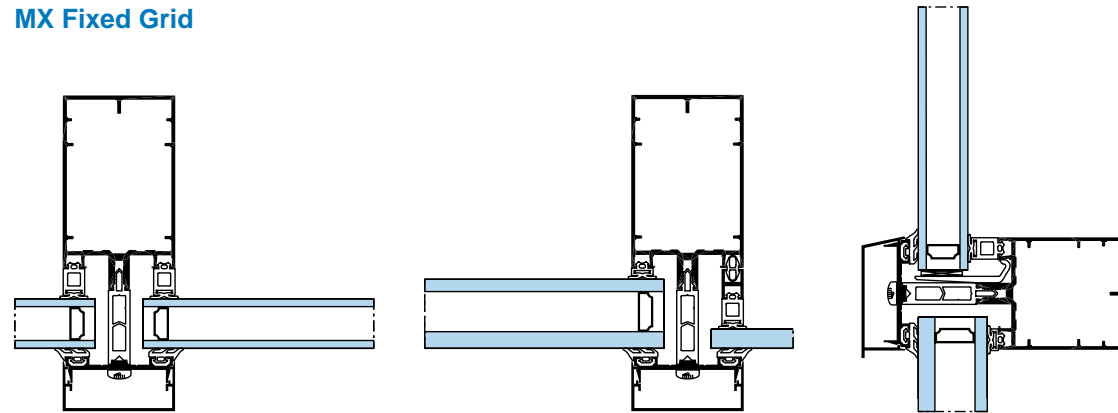
- An innovative face-fixed spigot for each mullion/transom joint is designed to ensure the injection of sealant is minimised and precisely controlled for improved weatherproofing
- Each individual drainage zone has a series of bespoke EPDM plugs between the isolators and pressure plates at each junction, preventing water ingress and removing the need for sealant for higher performance
- The MX system has the additional advantage of secondary mullion drainage to further improve weather performance and quality
- A PVC perimeter sealing profile ensures damp proofing at the building interface
- The system is zone drained and pressure equalised to ensure performance and drainage efficiency.



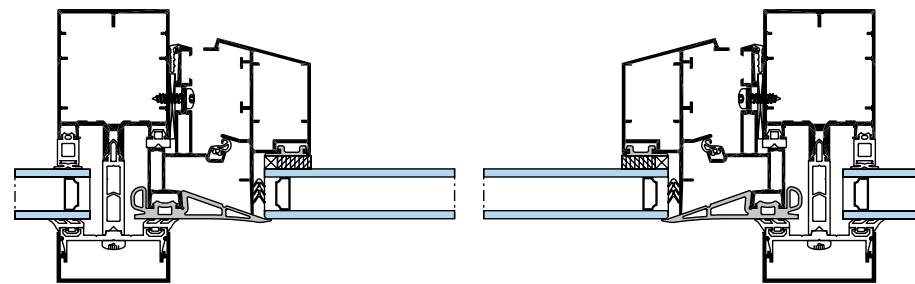
MX Visible Grid

MX Trame

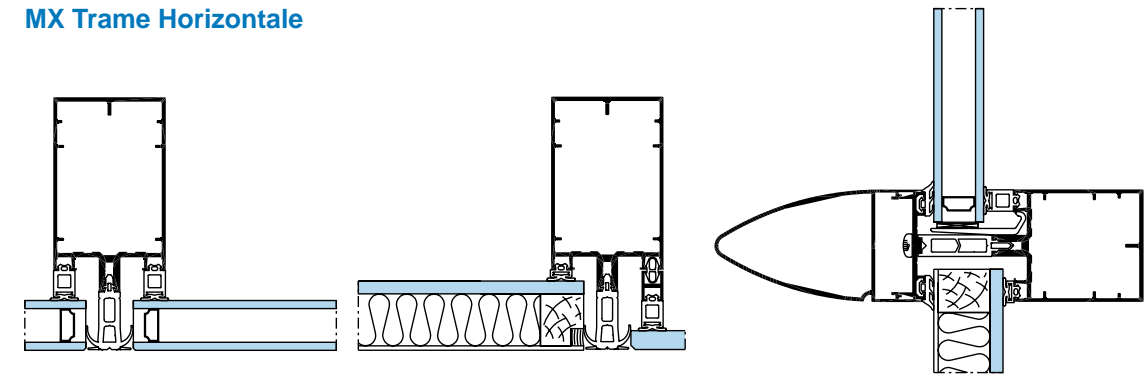
MX Fixed Grid



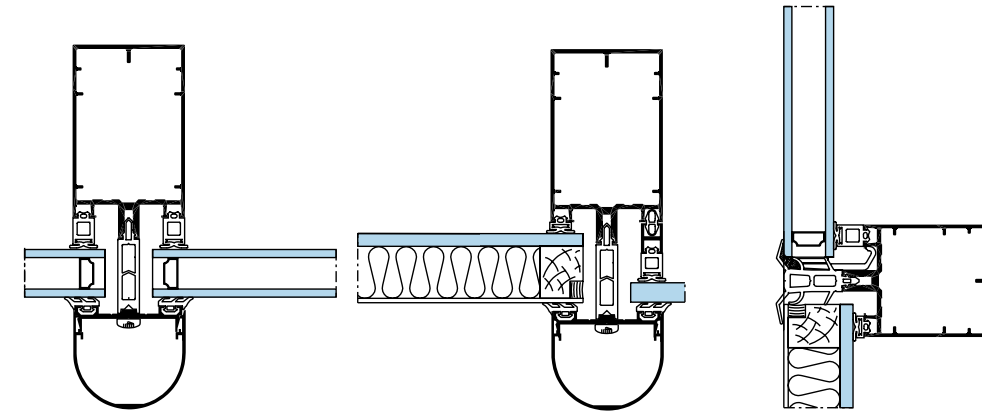
MX Open-in Concealed Vent



MX Trame Horizontale



MX Trame Verticale



Visible Grid

Features

- 6mm to 32mm glazing available as a flat façade or faceted up to 20°
- Superior load distribution with less deflection across the transoms, allowing the system to hold large, heavy glazing units
- Projecting top hung open-out, and tilt/turn concealed vents for natural ventilation whilst maintaining an uninterrupted flat façade
- Choice of glazing gaskets as over-sized vulcanised corners, linear supply, or made-to-order frames to suit project requirements.

Construction

- The faceted glazing option uses a standard cast face-fixed spigot for a facet of $\pm 10^\circ$, and a transom block with specially designed pressure plates, caps and adaptors for 10° to 20° facets
- The mullions and transoms are square cut and assembled using a combination of cast face-fixed junction spigots and concealed anti-rotation spigots for ease of fabrication

- There is also the option of transom blocks as an alternative to anti-rotation spigots to meet design and project requirements.

Weather Performance

- The MX visible grid system is thermally isolated using a 34mm TPE thermal break between the pressure plate and mullion or transom. This ensures superior thermal performance in line with the required building regulations
- A pressure plate holds the infill in place with a combination of EPDM gaskets and allows for zone drainage with pressure equalisation using punched slots into the pressure plates and caps.

Trame

Features

- MX Trame is a further design option, allowing specifiers to highlight the vertical or horizontal profiles across the building envelope
- MX Trame Horizontale can accommodate 6mm to 32mm glazing as a flat façade or faceted up to 10° . The concealed vent configurations are top hung open-out or tilt/turn
- MX Trame Verticale can carry 6mm to 32mm glazed units as a flat façade. Concealed vent options are top hung or tilt/turn
- On larger mullion or transom spans, the glass deflection is reduced using a centrally fitted pressure block.

Construction

- Projecting aerofoil transom caps add depth to the façade whilst slender face trim gaskets, which are flush with the front face of the infill, soften the corresponding vertical or horizontal sections
- The MX Trame system is dry glazed, removing the need for site-applied sealant.

Weather Performance

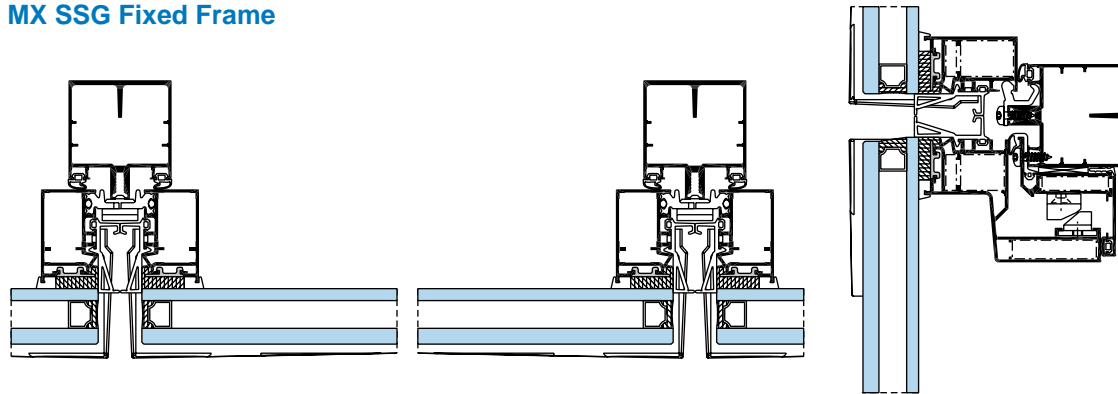
- A pressure plate on the mullion or transom holds the infill in place with a combination of EPDM gaskets and allows for zone drainage with pressure equalisation through punched slots into the pressure plates and caps
- MX Trame is thermally isolated using a 34mm TPE thermal break between the pressure plate and mullion or transom. This ensures superior thermal performance in line with the required building regulations.



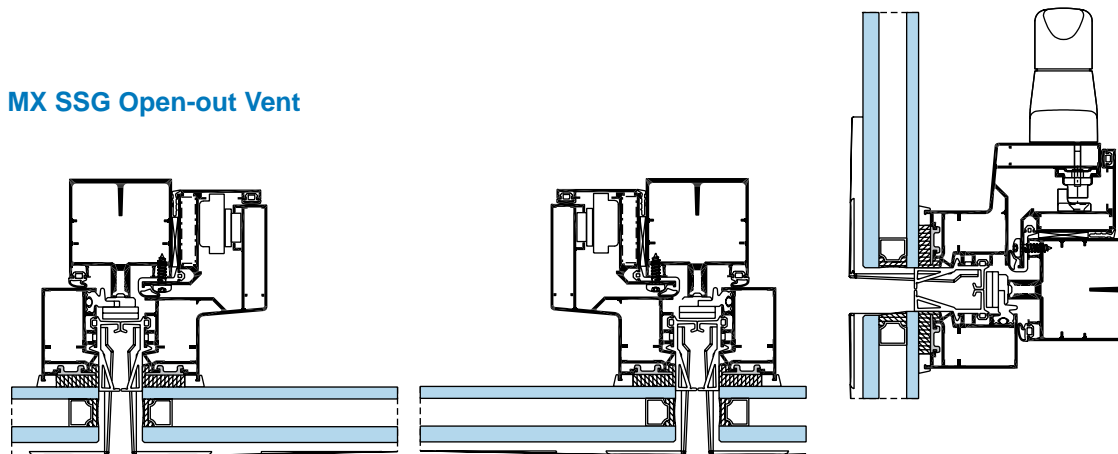
MX SSG

MX BG

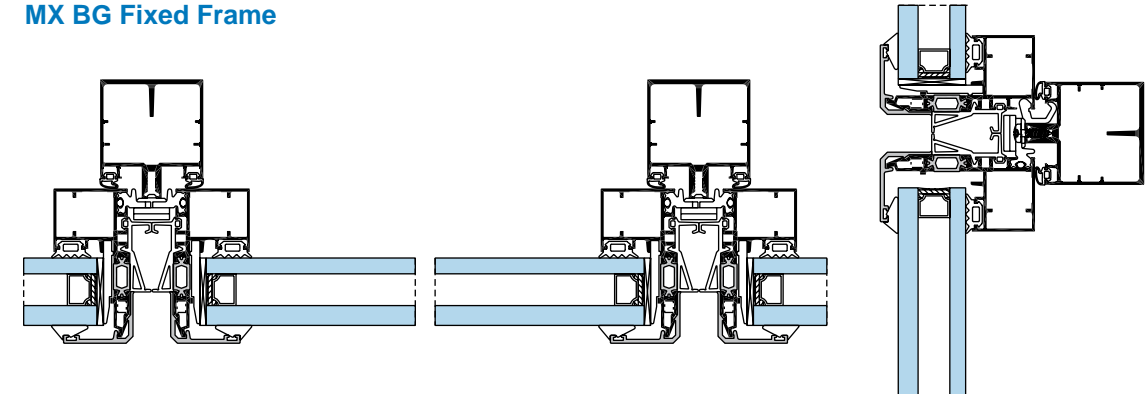
MX SSG Fixed Frame



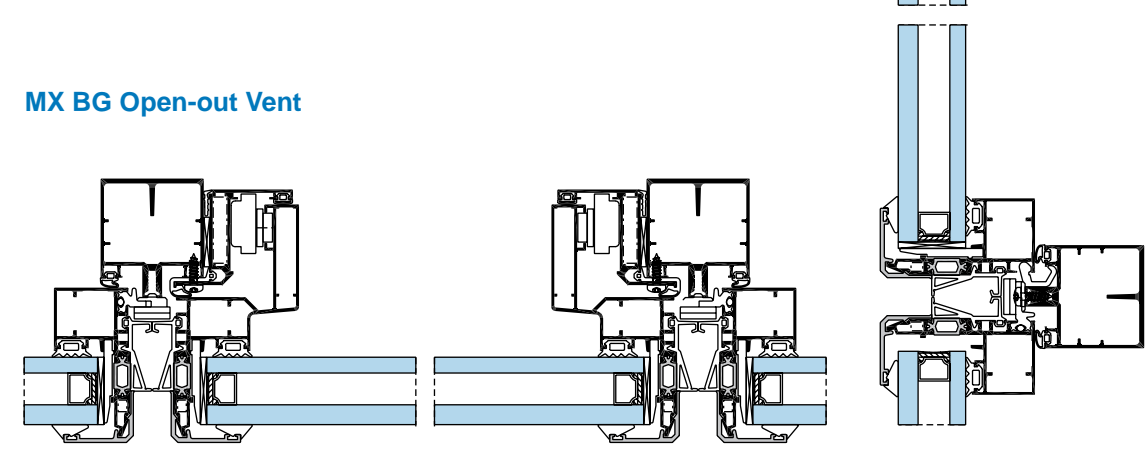
MX SSG Open-out Vent



MX BG Fixed Frame



MX BG Open-out Vent



MX SSG Structural Sealant Glazing

Features

- MX SSG responds to the increasing demand for structural glazing to create striking flush glass façades with visibly less aluminium
- MX SSG uses the same grid system as MX beaded glazing, MX Trame and MX visible grid, allowing specifiers to vary the aesthetics of the building envelope without the need for additional interface detailing and construction
- The system is manufactured in controlled factory conditions by an approved bonding specialist to certified standards
- A patented 'hook and toggle' system facilitates installation
- The double glazed units are bonded onto the carrier frame with one or two-part silicone. The external edges are arised and a 2mm step to the outer pane allows standing water to drain away for improved weather performance
- A bespoke EPDM perimeter frame gasket is fitted to every frame
- MX SSG can accommodate 6mm, 28mm or 34mm structural sealant glazing or 50mm composite insulated panels
- Available as a flat façade or faceted up to 3°
- The glass is supported by a patented glass security support at each corner of the carrier frame which allows a maximum glass weight of 200kg per frame
- A choice of fixed lights, top hung open-out and tilt/turn concealed vents are available
- A single carrier frame can be easily removed from the inside using a special tool for replacement glazing.

Construction

- An EPDM internal compression gasket makes the system fully air tight. There is a choice of a frame gasket or over-sized vulcanised corners fitted on site
- Carrier frames are fitted onto the curtain wall grid using the 'hook and toggle' system
- The carrier frames are mitre jointed using an epoxy-bonded and mechanically crimped corner cleat for a robust construction.

MX BG Beaded Glazing

Features

- MX BG has an externally beaded frame option to create a 'picture frame' appearance
- MX BG uses the same grid system as MX structural glazing, MX Trame and MX visible grid, allowing specifiers to vary the aesthetics of the building without the need for additional interface detailing and construction
- A patented 'hook and toggle' system facilitates installation
- The system is dry glazed onto carrier frames in the factory
- MX BG can carry 30mm to 36mm glazing
- Available as a flat façade or faceted up to 3°
- Externally glazed, the top and bottom beads are pop-riveted to the fixed frame for additional security
- A choice of fixed lights, top hung open-out and tilt/turn concealed vents are available
- A single carrier frame can be easily removed from the inside for replacement glazing using a special tool.

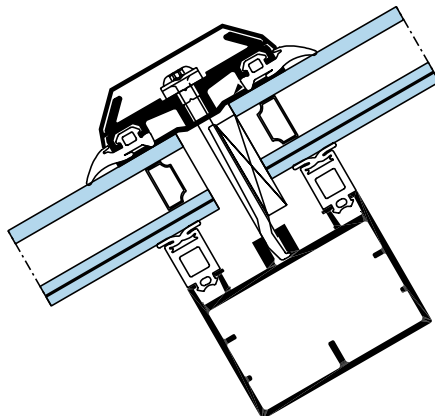
Construction

- An EPDM internal compression gasket makes the system fully air tight. There is a choice of a frame gasket or over-sized vulcanised corners fitted on site.
- Carrier frames are fitted onto the curtain wall grid using the 'hook and toggle' system
- The carrier frames are mitre jointed using an epoxy-bonded and mechanically crimped corner cleat for a robust construction.

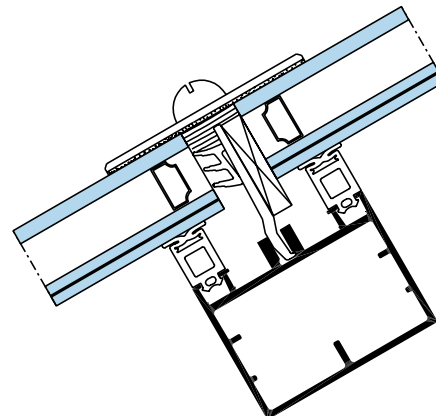
MX Sloped Glazing

MX Design Options

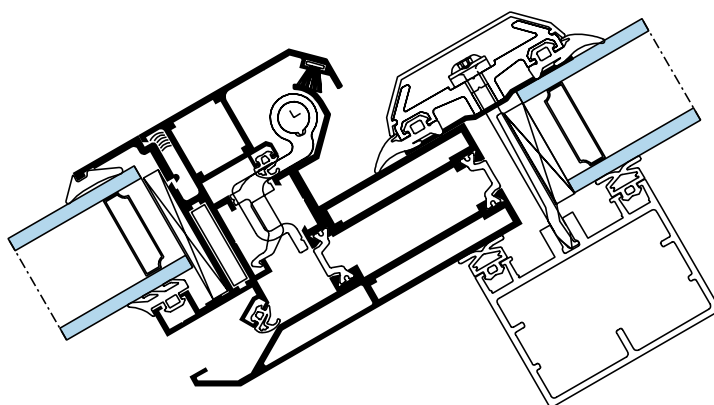
MX Sloped Visible Grid



MX Sloped Trame Verticale



MX Roof Vent



Sloped Glazing

Features

- The MX system allows sloped glazing to be created in MX visible grid or MX Trame Verticale
- These options give specifiers the flexibility to construct sloped roofs, atria, canopies, valleys and pyramids, which are fully compatible and visually consistent with the vertical façade.

MX Visible Grid:

- A special transom cap for the horizontal and vertical profiles reduces the collection of water on the slope
- The rafters and transoms are square cut and assembled using a penetrating transom principle.

MX Trame Verticale:

- There are vertical caps and silicone sealant on the transom with pressure blocks to prevent deflection under negative wind load pressure
- The double glazed units should be manufactured using structural silicone sealant
- A minimum slope is available of 10° for single glazed units and 15° for double glazing.

Construction

- The 8mm to 32mm infill is held by horizontal and vertical pressure plates for the visible grid system and by vertical pressure plates and horizontal pressure blocks for MX Trame Verticale.

Weather Performance

- Drainage is achieved from the transom ends through the rafters
- The grid system is glazed with an EPDM gasket to the inside and butyl tape to the outside. MX Trame Verticale has an infill gasket and silicone on the transoms.

Design

| | Infill | Facet | Concealed Vent |
|----------------------|---|--------------------------------------|---|
| MX Grid | 6mm to 32mm | Up to 20° | Concealed top hung, side hung, open-in tilt/turn; 23mm and 31mm glazing |
| MX Trame Horizontale | 6mm to 32mm | Up to 10° | Concealed top hung, side hung, open-in tilt/turn; 23mm and 31mm structural glazing |
| MX Trame Verticale | 6mm to 32mm | Flat | Concealed top hung, side hung, open-in tilt/turn; 23mm and 31mm structural glazing |
| MX SSG | 6mm, 28mm, 34mm structural glazing; up to 50mm insulated panel with 6mm glazing | Up to 3° | Concealed top hung, side hung, open-in tilt/turn; 28mm and 34mm structural glazing |
| MX BG | 30mm to 36mm (externally beaded, dry glazed) | Up to 3° | Concealed top hung 30-36mm glazing beaded, side hung, open-in tilt/turn; 28mm and 34mm structural glazing |
| MX Sloped Glazing | 8mm to 32mm | Minimum slope 15°, maximum slope 75° | Concealed to inside, open-out: 6mm to 30mm glazing, beaded |

Size and Weight Limitations

| Option | Maximum Weight | Maximum Size - Subject to Design |
|---|------------------------|--|
| Transom assembled with face-fixed and anti-rotation spigots | 400 kg | To be advised |
| Transom assembled with face-fixed SSG and anti-rotation spigots | 400 kg | To be advised |
| Transom, block mounted | 300 kg | To be advised |
| MX SSG/MX BG frame | 200 kg | To be advised |
| Sloped frame | As design calculations | To be advised |
| Top hung open-out concealed vent | 120 kg | 1500mm w x 1750mm h 1000mm w x 2000mm h |
| Tilt/turn or side hung open-in concealed vent | 100 kg | 1500mm w x 2000mm h (double glazed) |
| Roof vent | 60 kg | 1500mm w x 1500mm h |

MX General Specifications

General Specifications

Weather Performance

A sample façade for each of the following systems was tested in accordance with NF standards, meeting the requirements of BS EN 13830 Specification for Curtain Walling. Full test results are available on request.

| | Air Permeability | Static Water Tightness | Dynamic Water Tightness | Wind Resistance | Safety |
|---|---|------------------------|--------------------------|-----------------------------|-----------------------|
| MX Grid, Trame, with Concealed vent | <4m³/h/m² at +1200Pa; 4m³/h/m² at -900Pa (A*4) (Vent A*3) | Pass 1200Pa (E*E 1200) | --- | Pass +2400Pa -1700Pa (V*C5) | --- |
| MX SSG, MX BG, with open-out vent | 0.2m³/h/m² at 600Pa (A*4) (Vent A*4) | Pass 600Pa (E*9A) | Pass 15 minutes at 600Pa | Pass 2400Pa (E*E2400) | Pass 3600Pa (E*E3600) |
| MX SSG, MX BG tilt/turn vent | Pass A*4 | Pass E*E1200 | --- | Pass E*C5 | --- |
| Roof vent (BS EN 12207, 122008 & 12210) | Pass A*3 | E*7B (slope 5°) | --- | V*A3 | --- |

Thermal Performance

The precise performance will depend on a combination of frame size, glazing thickness, type of infill and the option specified. Indicative values are shown below as a guide. Further details are available on request.

Facade U-value (W/m²K)
Two frames per floor: L=1.35m x H = (1.50 + 1.50)m

| U-value Glass W/m²K | | | | | | | | | |
|---------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | 1.1 | 1.2 | 1.3 | 1.4 | 1.5 | 1.7 | 1.9 | 2.1 | 2.3 |
| Visible Grid* | 1.5 | 1.6 | 1.7 | 1.8 | 1.9 | 2.0 | 2.2 | 2.4 | 2.6 |
| Trame* | 1.5 | 1.6 | 1.7 | 1.8 | 1.9 | 2.1 | 2.2 | 2.4 | 2.6 |
| MX SSG** | 1.8 | 1.8 | 1.9 | 2.0 | 2.1 | 2.3 | 2.4 | 2.6 | 2.8 |
| MX BG* | 1.7 | 1.8 | 1.9 | 2.0 | 2.1 | 2.2 | 2.4 | 2.5 | 2.7 |

*32mm double glazed unit; **34mm double glazed unit

Three frames per floor: L=1.35m x H top frame= 0.85m x H middle frame = 1.50 x H bottom frame = 1.00m

| U-value Glass W/m²K | | | | | | | | | |
|---------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | 1.1 | 1.2 | 1.3 | 1.4 | 1.5 | 1.7 | 1.9 | 2.1 | 2.3 |
| Visible Grid* | 1.6 | 1.7 | 1.8 | 1.8 | 1.9 | 2.1 | 2.3 | 2.4 | 2.6 |
| Trame* | 1.6 | 1.7 | 1.8 | 1.9 | 1.9 | 2.1 | 2.3 | 2.5 | 2.6 |
| MX SSG** | 1.9 | 2.0 | 2.1 | 2.2 | 2.3 | 2.4 | 2.6 | 2.7 | 2.9 |
| MX BG* | 1.8 | 1.9 | 2.0 | 2.0 | 2.1 | 2.3 | 2.4 | 2.6 | 2.8 |

*32mm double glazed unit; **34mm double glazed unit

Fabrication and Installation

Common tooling, quality components and accessories and advanced manufacturing techniques help to ensure fabrication quality, precise installation and continued performance to specification.

Technal has a national network of approved fabricators and offers full training for both products and installation.

Materials

- Aluminium profiles are extruded from alloys 6005 T6, 6063 T6 or 6060 T5 to BS EN 12020, BS EN 573-3, BS EN 515 and BS EN 775-1 to 9
- Accessories are cast from Zamak 5 or A-S9G03 to BS EN 12844
- All frame gaskets are structural silicone certifiably compatible EPDM
- Polyamide thermal breaks are extruded from PA6-6 (0.25 FV)
- Screws are torx head austenitic stainless steel.

Finishes

- Standard mill finished
- Natural self-colour or Anolok anodised in accordance with BS EN 1273 and BS3987
- Stoved polyester powder coated finishes in a wide range of colours and in accordance with BS 6496
- The MX suite is also available in Technal's exclusive flecked gloss Cendré polyester powder coated colours.

Technal

Technal is a brand offered by Hydro Building Systems, one of Europe's market leaders in the design, manufacture and distribution of high performance aluminium glazing solutions.

Technal's product portfolio comprises a fully integrated range of aluminium curtain walling, door, window and ground floor framing systems.

With a history in the UK building products industry, which spans more than 30 years, Technal has a clear understanding of the requirements of architects, contractors, developers and fabricators, which has enabled it to engineer an innovative, technically advanced and highly flexible range of products.





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