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MX

CURTAIN WALLING SUITE

Inspired façade solutions. Innovations in curtain walling technology and the widest range of design options from a single grid system, for unparalleled aesthetic variation and performance excellence.



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 the widest choice of 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.



Combining Aesthetics with Functionality

The MX system 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 sight lines and interfaces across a project - whether the requirement is for low to high rise curtain walling, and ribbon, structural, beaded and sloped glazing.

Excellence in Façade Design

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.

A Complete Range of Design Options

MX is a highly engineered façade system, which offers the widest choice of design options from a single grid:

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



MX

Innovative Façade Technology



Key Features and Innovations

- **Visual consistency.** Slim, constant 52mm sight lines for the mullion and transoms giving a uniform appearance across the MX suite
- **Thermal efficiency.** Excellent thermal performance to achieve low U values
- **Technically advanced framing system.** High quality components for long-term durability
- **Intelligent design.** Engineered for quality fabrication and installation
- **Meeting individual project requirements.** A choice of depths up to 240mm for the structural members, for design flexibility and to ensure cost efficiency
- **Full system compatibility.** Technal's FXi casement windows, PXi and CD commercial doors, and GXi sliding systems can be used with MX curtain walling
- **Concealed vents.** There is the option of concealed opening vents in a variety of configurations
- **Design detailing.** A range of shaped caps offer further design flexibility
- **Choice of infills.** The system can carry glazing units and insulated or other panel types.

Construction

- **Robust 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 strong construction is easy to fabricate and allows greater accuracy and enhanced stability
- **High quality construction.** The mullion jointing uses a specially designed sleeve spigot for each mullion for a high quality joint
- **Cost efficiency.** 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

- **Enhanced weather resistance.** An innovative face-fixed spigot for each mullion and 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
- **Efficient drainage.** The MX system has the additional advantage of secondary mullion drainage to further improve weather performance and quality. The system is zone drained and pressure equalised to ensure performance and drainage efficiency
- **Interface detailing.** A PVC perimeter sealing profile ensures damp proofing at the building interface.



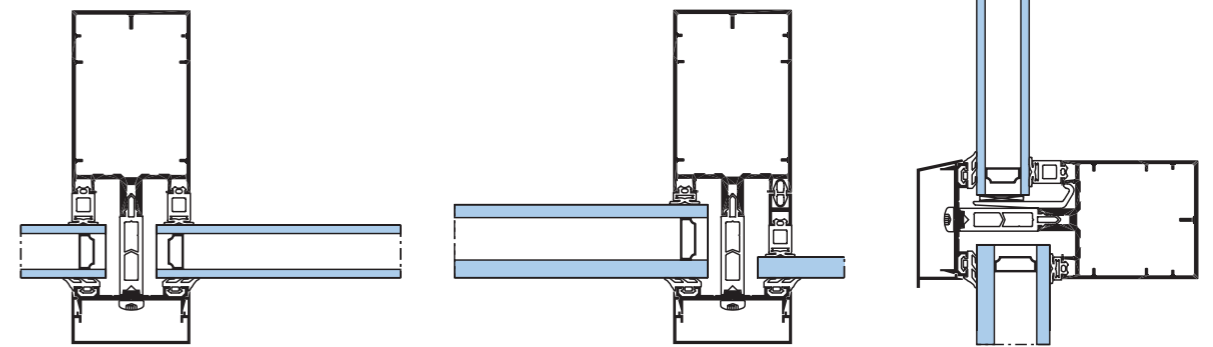
MX

Visible Grid

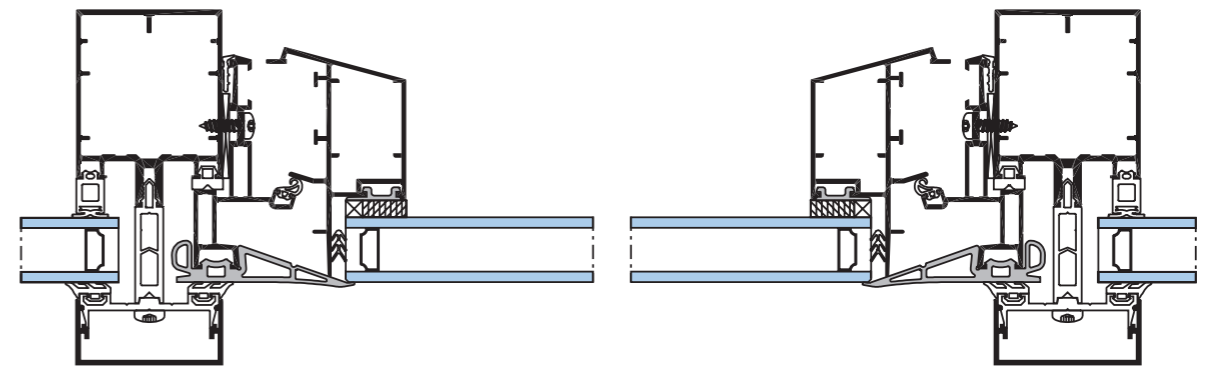


Key Features

- **Flat or faceted façades.** 6mm to 32mm glazing available as a flat façade or faceted up to 20°
- **Superior load distribution.** Less deflection across the transoms allows the system to hold large, heavy glazing units
- **Concealed vents.** Projecting top hung open-out, and tilt/turn concealed vents for natural ventilation whilst maintaining an uninterrupted flat façade
- **Choice of glazing gaskets.** Available as over-sized vulcanised corners, linear supply, or made-to-order frames to suit project requirements
- **Larger glass sizes.** MX62 is an option for the vertical façade, which allows specifiers to use a 62mm module for larger glass sizes, maximising natural light
- **Additional acoustic performance.** MX Acoustic is another option for MX Visible Grid for projects requiring further acoustic protection with 42mm glazing.



A MX Visible Grid



B MX open-in concealed vent

Construction

- **Facilitating fabrication.** 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*
- **Faceted façades.** 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*
- **Specification option.** There is also the option of transom blocks as an alternative to anti-rotation spigots to meet design and project requirements.*

Weather Performance

- **Enhanced thermal performance.** The standard 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 efficiency to meet or exceed the required Building Regulations
- **Effective drainage.** 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.

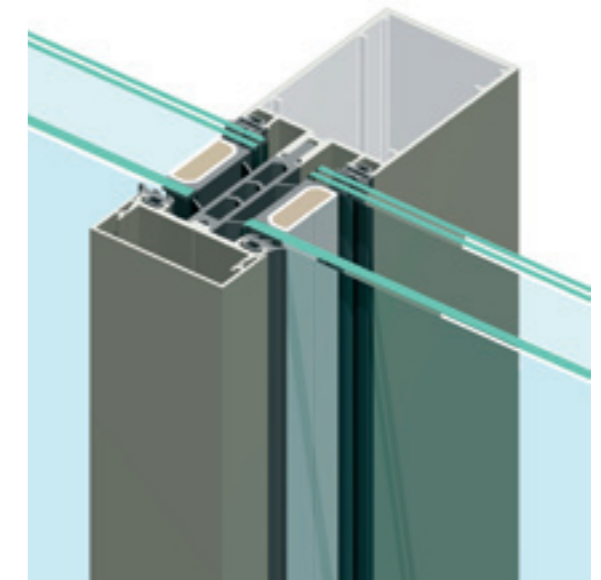
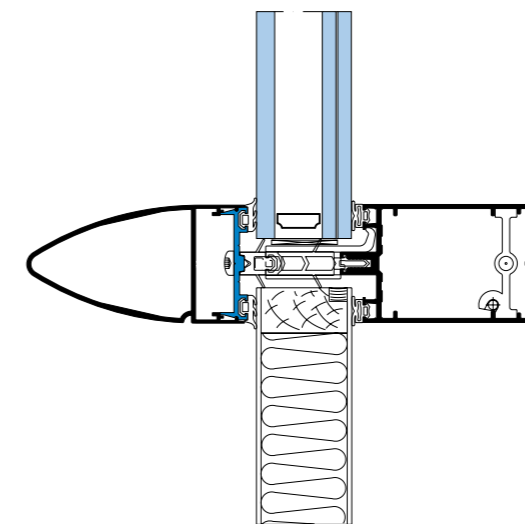
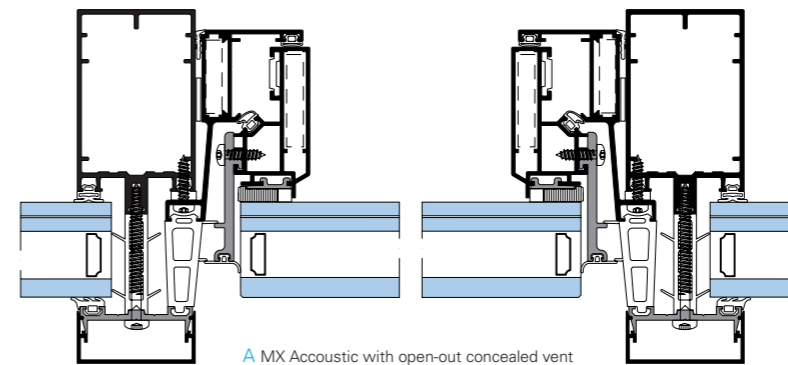
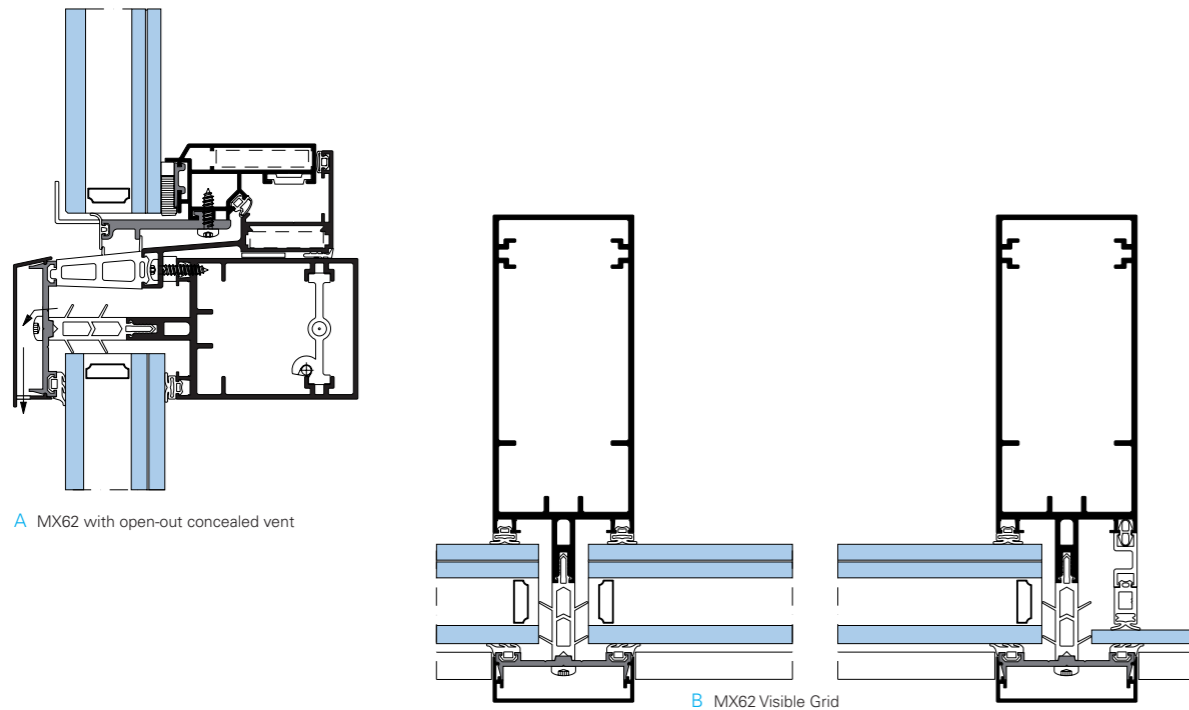
Note: *refer to MX62 construction details.



MX62



MX Acoustic



Key Features

- **Larger glass dimensions.** MX62 gives specifiers the option of a 62mm module for the MX Visible Grid vertical façade to allow glazed units in larger sizes to be accommodated, maximising natural light
- **Loadings.** The maximum weight is 600 kg per transom where the half perimeter is between 5m and 7m
- **Profile options.** MX62 is available in three mullion/transom sizes - 80mm, 140mm, and 200mm boxes
- **Simple application.** This design option uses one pressure plate, one horizontal and one vertical cap, and will accommodate 8mm to 44mm glazing as a flat façade
- **Concealed vent options.** Structurally bonded top hung concealed vents can be supplied for 36mm and 42mm glazing

- **Additional reinforcement.** There is also the option of steel reinforcements to further strengthen the curtain wall
- **System compatibility.** Insert profiles will allow the Technal PXi commercial door system and FXi casement windows to be incorporated in the curtain wall grid.

Construction

- Aluminium sleeves are used as on the standard MX Visible Grid system
- The transoms are spigot-fixed and accommodate the infill of 8mm to 44mm, with a maximum weight of 600 kg/transom.

Key Features

- **Additional noise protection.** MX Acoustic is an option for both MX Visible Grid and MX Trame Horizontale for applications where additional acoustic performance is required, such as city centre apartments, hospitals, student accommodation and buildings near airports and railway lines
- **Flat and faceted façades.** A 32mm to 42mm infill will improve acoustic performance for vertical façades, available as a flat façade or faceted up to $\pm 20^\circ$ for MX Visible Grid and a facet of up to $\pm 10^\circ$ for MX Trame Horizontale

- **Concealed vent options.** Structurally bonded top hung concealed vents can be supplied for 36mm and 42mm glazing
- **System compatibility.** Insert profiles will allow the Technal PXi door system and FXi casement windows to be incorporated in the curtain wall grid.

Construction

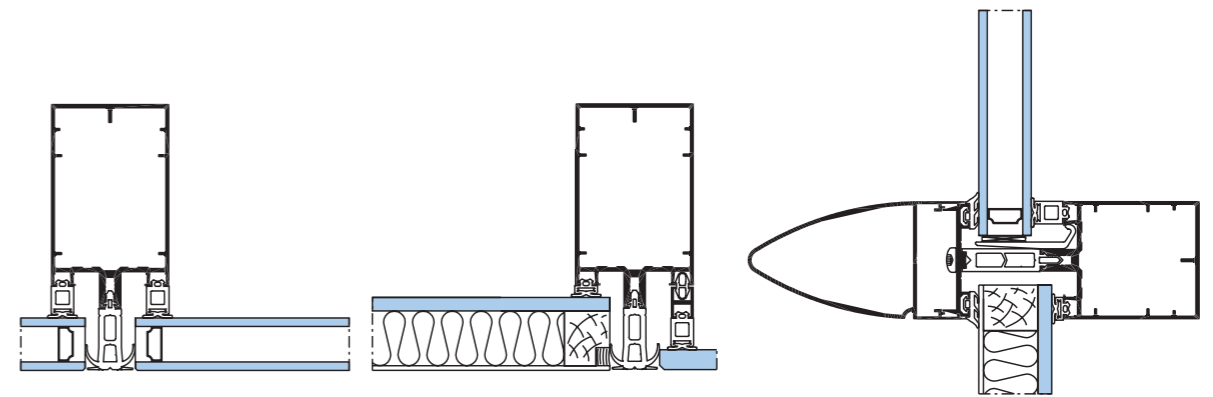
- The transoms can be spigot-fixed or block-mounted to accommodate the 32mm to 42mm infill, with a maximum weight of 240 kg/transom.

MX Trame

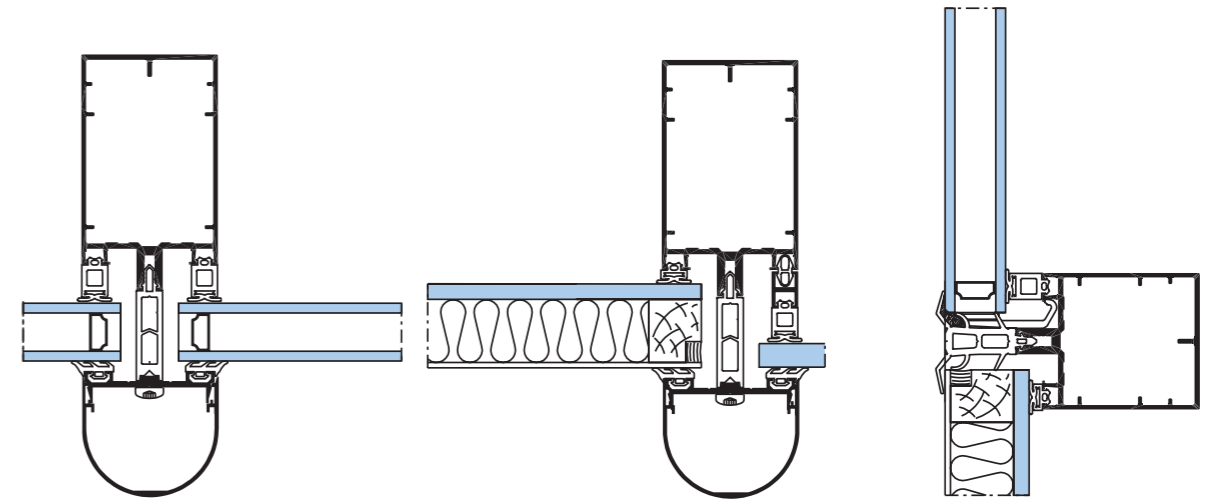


Key Features

- **Distinctive design detailing.** MX Trame is a further design option, allowing specifiers to highlight the vertical or horizontal profiles across the building envelope
- **Glazing and vent options.** 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
- **Reducing deflection.** On larger mullion or transom spans, the glass deflection is reduced using a centrally fitted pressure block
- **Additional acoustic protection.** MX Acoustic is an option for MX Trame Horizontale for applications where further acoustic performance is required.



A MX Trame Horizontale



B MX Trame Verticale

Construction

- **Pioneering design.** 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
- **Dry glazed.** The MX Trame system is dry glazed, removing the need for site-applied sealant.

Weather Performance

- **Weather resistant design.** 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
- **Thermal efficiency.** MX Trame is thermally isolated using a 34mm TPE thermal break between the pressure plate and mullion or transom.



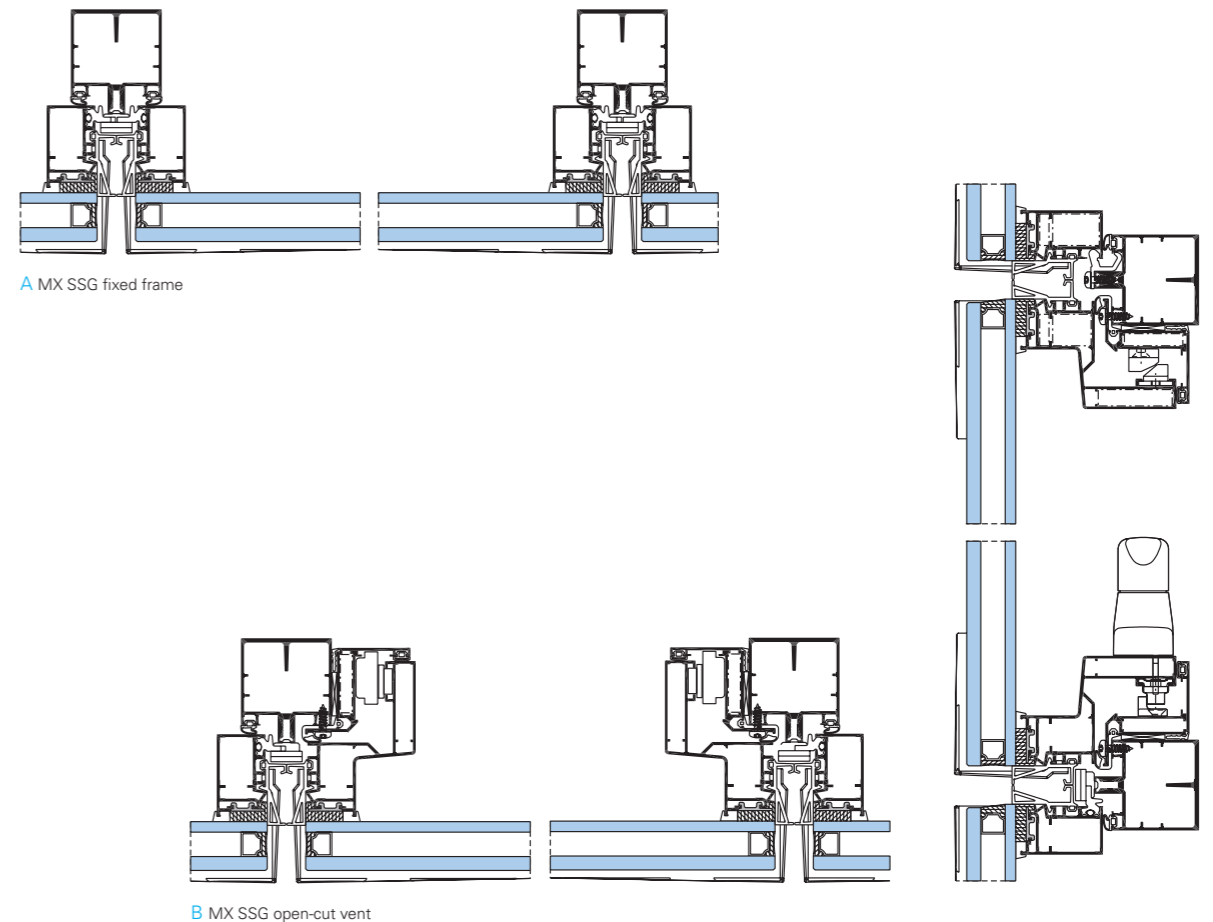
MX SSG

Structural Sealant Glazing



Key Features

- **Less visible aluminium.** MX SSG responds to the increasing demand for structural glazing to create flush glass façades with visibly less aluminium. The double glazed units are bonded onto the carrier frame with one or two-part silicone
- **Ease of specification and installation.** MX SSG uses the same grid system as MX BG 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
- **Reassuring quality.** The system is manufactured in controlled factory conditions by an approved bonding specialist to certified standards
- **Patented design.** A patented 'hook and toggle' system facilitates installation
- **Weather performance.** The external edges of the glazed units are arised and a 2mm step to the outer pane allows standing water to drain away for improved weather performance
- **Bespoke gasket.** A specially designed EPDM perimeter frame gasket is fitted to every frame
- **Glazed units and infills.** MX SSG can accommodate 6mm, 28mm or 34mm structural sealant glazing or 50mm composite insulated panels
- **Flat and faceted façades.** Available as a flat façade or faceted up to 3°
- **Loadings.** 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
- **Specification options.** A choice of fixed lights, top hung open-out and tilt/turn concealed vents are available
- **Replacement glazing.** A single carrier frame can be easily removed from the inside using a special tool for replacement glazing.



Construction

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

MX BG

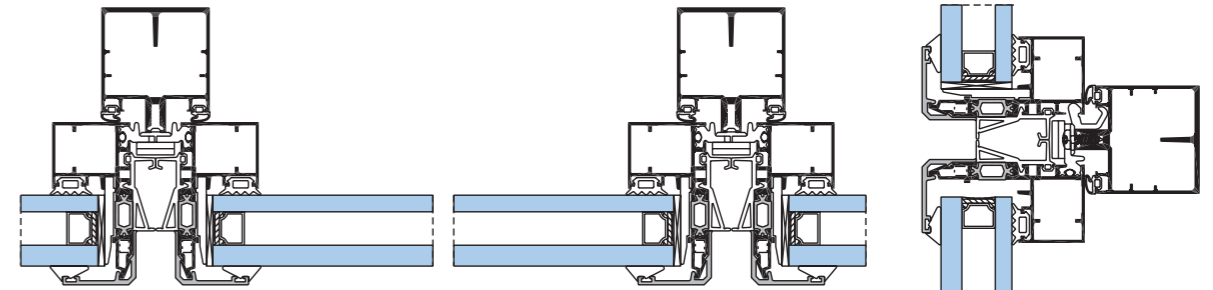
Beaded Glazing



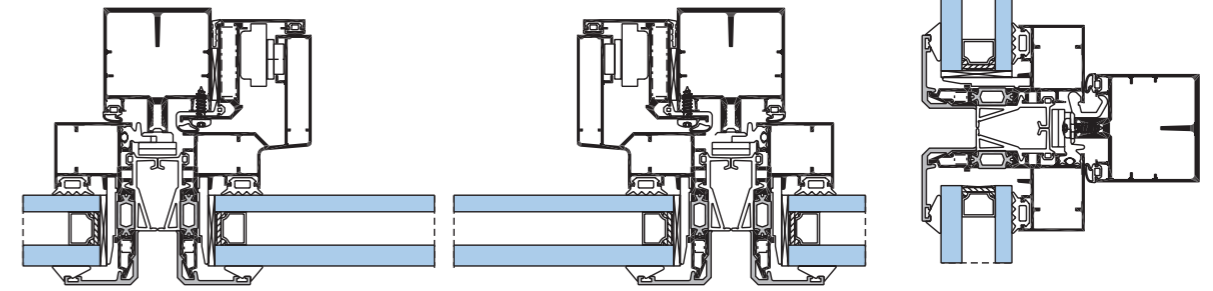
Key Features

- **A contemporary alternative.** MX BG has an externally beaded frame option to create a 'picture frame' appearance across a façade
- **System compatibility.** 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
- **Patented design.** A patented 'hook and toggle' system facilitates installation
- **Dry glazing.** The system is dry glazed onto carrier frames in the factory
- **Glazing options.** MX BG can carry 30mm to 36mm glazing
- **Flat or faceted.** 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
- **Specification options.** A choice of fixed lights, top hung open-out and tilt/turn concealed vents are available
- **Replacement glazing.** A single carrier frame can be easily removed from the inside for replacement glazing using a special tool.



A MX BG fixed frame



B MX BG open-out vent

Construction

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



MX Sloped

Sloped Glazing



Key Features

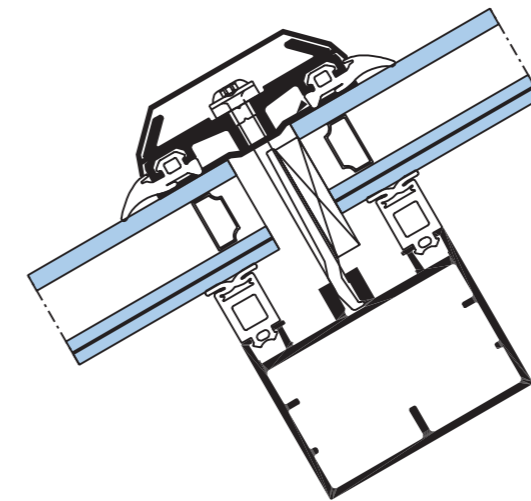
- **Design options.** The MX system allows sloped glazing to be created in MX Visible Grid or MX Trame Verticale
- **Uniform appearance.** These options give specifiers the flexibility to construct sloped roofs, atria, canopies, valleys and pyramids, which are fully compatible and visually consistent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

MX Visible Grid:

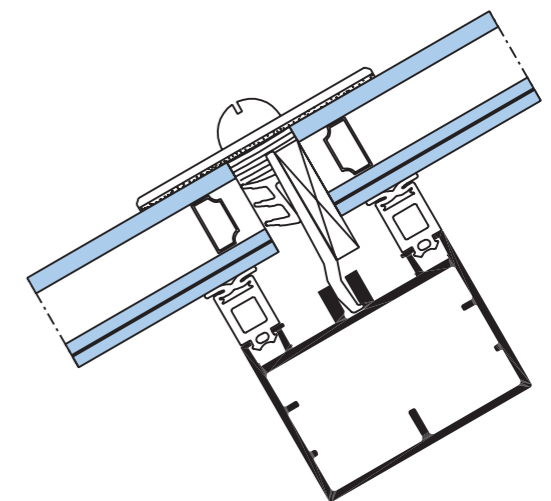
- **Specially designed capping.** A special transom cap for the horizontal and vertical profiles reduces the collection of water on the slope.

MX Trame Verticale:

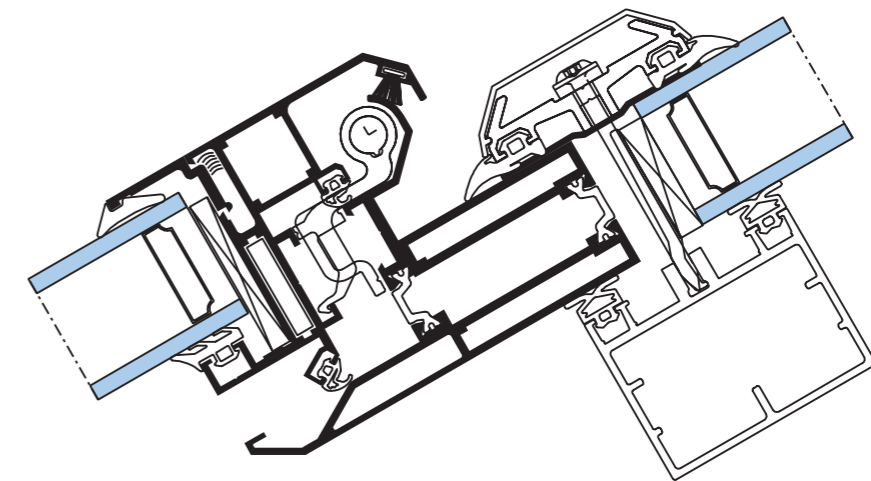
- **Minimising deflection.** There are vertical caps and silicone sealant on the transom with pressure blocks to prevent deflection of the glass under negative wind load pressure
- **Glazing units.** The double glazed units are manufactured using structural silicone sealant
- **Incline options.** A minimum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



A MX Sloped Visible Grid



B MX Sloped Trame Verticale



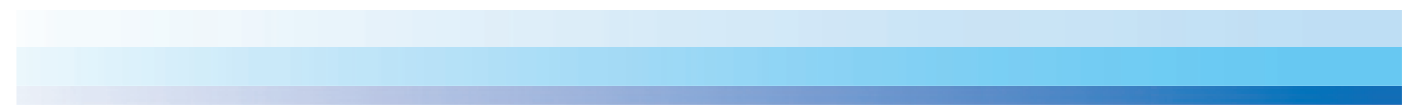
C MX roof vent

Construction

- The 8mm to 32mm infill is held by horizontal and vertical pressure plates for the MX Visible Grid system and by vertical pressure plates and horizontal pressure blocks for MX Trame Verticale
- **Construction detailing.** The rafters and transoms are square cut and assembled using a penetrating transom principle.

Weather Performance

- **Effective drainage.** Drainage is achieved from the transom ends through the rafters
- **Weather resistance.** 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.





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. MX also meets the requirements of the CWCT Standard for building envelopes. Further details are available on request.

	Air Permeability	Static Water Tightness	Dynamic Water Tightness	Wind Resistance	Safety
MX Visible Grid, MX Trame; concealed open-out 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)	-
MX62 Visible Grid, concealed open-out vent	A4	0.2m³/h/m² at 600Pa (A*4) (Vent A*4)	-	Pass 2400Pa	-
MX Acoustic Grid, concealed open-out vent	A4	Pass 1200Pa (E1200)	-	Pass 2400Pa	-
MX Acoustic Trame Horizontale, concealed open-out vent	A4	Pass 750Pa (E750)	-	Pass 1800Pa	-
MX SSG/MX BG; concealed 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

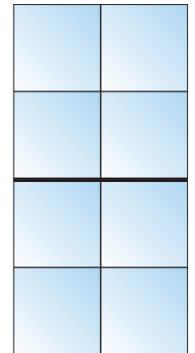
The precise performance will depend on a combination of frame size, glazing thickness, type of infill and the option specified. Indicative values are shown below as a guide. Further details are available on request.

Façade U-values W/m²K

Two frames per floor: L=1.35m x H = (1.50 + 1.50)m. 100% glazed

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

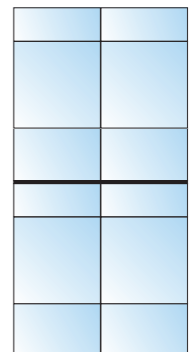
*32mm double glazed unit; **34mm double glazed unit



Three frames per floor: L=1.35m x H top frame = 0.85m x H middle frame = 1.50m x H bottom frame = 1.00m. 100% glazed

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

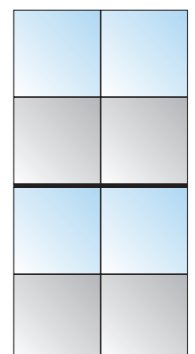
*32mm double glazed unit; **34mm double glazed unit



Two frames per floor: L=1.35m x H top frame = 1.50m x H bottom frame + slab = 1.70m. 75% glazed, 25% panelled

U-value Glass W/m²K									
	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4
MX Acoustic	1.1	1.1	1.2	1.2	1.3	1.3	1.4	1.4	1.4
MX62*	1.1	1.1	1.2	1.2	1.3	1.3	1.4	1.4	1.4

*30mm insulated glass panel with polystyrene core U_p = 0.85, fixed light. 75% glazed + 25% panelled



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
MX62	600 kg	To be advised
MX Acoustic	240 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

Materials and Components

As with all Technal façade systems, only the highest quality materials and components are used for the MX system for low maintenance and performance over time:

- 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 austenitic stainless steel.

Finishes and Colours

A wide range of finishes is available for the MX curtain walling suite to meet individual project requirements, complement existing buildings and offer additional design freedom for architects and specifiers:

- Natural self-colour or Anolok anodised in accordance with BS EN 12373-1:2001 and BS 3987
- Stoved polyester powder coated finishes in a wide palette of colours and in accordance with BS 6496
- The MX system is also available in Technal's exclusive flecked gloss Cendré polyester powder coated colours for a stylish and contemporary appearance.

MX



Summary of Design Options

	Infill	Facet	Concealed Vent
MX Visible Grid	6mm to 32mm	Up to 20°	Concealed top hung, side hung, open-in tilt/turn; 23mm and 31mm glazing
MX62	8mm to 44mm	Flat	Concealed top hung; 36mm and 42mm 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 Acoustic	32mm to 42mm	MX Visible Grid - up to 20°; MX Trame Horizontale - up to 10°	Concealed top hung; 36mm and 42mm 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

TECHNAL



Inspirational Façade Solutions

Innovative Product Portfolio

The Technal brand from Hydro Building Systems was created 50 years ago and is a pioneering international specialist in architectural aluminium façade systems.

Technal has established an unrivalled reputation for innovative and inspirational design solutions and has built up an impressive portfolio of award-winning projects.

With a history in the UK which spans more than 30 years, Technal's systems have been used to create purpose-designed façades for buildings in sectors as diverse as offices, airports, leisure, schools and higher education, healthcare and apartments.

Technal has a clear understanding of the requirements of architects, contractors, developers, building occupiers and fabricators, which has enabled it to engineer an innovative, technically advanced and highly flexible product portfolio.



Technical Support for Architects and Contractors

A comprehensive range of support services is available to architects and contractors, which includes technical assistance with design development, through to the preparation of specifications.

To help specifiers in the production of faster and more accurate project drawings, CAD files for all the façade systems offered by Technal can be downloaded from the specification section of the Technal website.

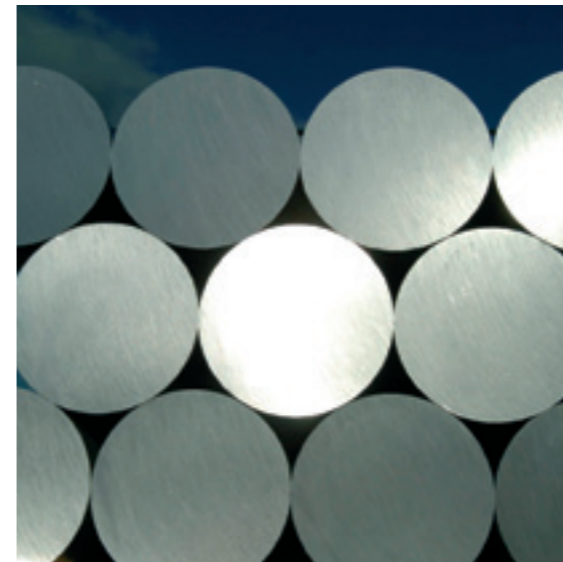
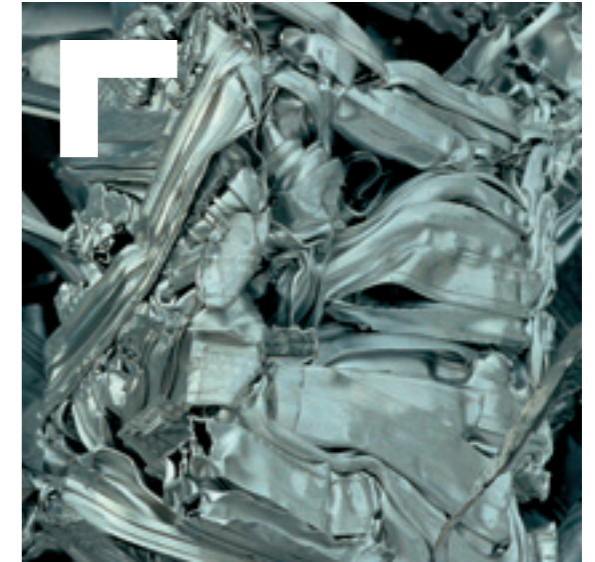
Technal also has the capabilities and resources to respond to individual project needs through more bespoke designs for specific schemes, performance enhancements and new innovations to enhance both new and existing architecture.



National Network of Fabricators and Installers

Technal has a national network of approved fabricators and installers, and recognises the importance of fabrication and installation for the long-term performance of its systems.

As a subscribing sponsor of the Centre for Window and Cladding Technology and an active member of the Council for Aluminium in Building, Technal is committed to advising and providing training support for its network of fabricators and installers from its dedicated training centre to ensure standards of the very highest quality.



Committed to Sustainability and Recycling

Technal is working with leading industry specialists and associations to continually improve the recyclability of aluminium and to reduce carbon emissions during the life cycle of its products.

Its research and development work has also achieved an impressive four-fold increase in the thermal performance of its systems over the last 20 years. And the demand for larger glazed spans generates increased solar gain in winter and reduces the reliance on artificial lighting.

The inherent qualities of aluminium, its infinite recyclability, strength and lightness, durability and low maintenance qualities mean it is one of the most sustainable building materials.

An average of 95 per cent of the aluminium in buildings is collected for recycling. This process saves 95 per cent of the energy needed to produce prime metal and typically, 95 per cent or more of the original material is still recoverable (source: Council for Aluminium in Building).





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Technal is a Hydro brand

Technal's continuous development programme may result in product modifications.
Consequently, Technal reserves the right to vary the specifications shown in this literature without notice.

