Géode

2nd quarter 2006

MX

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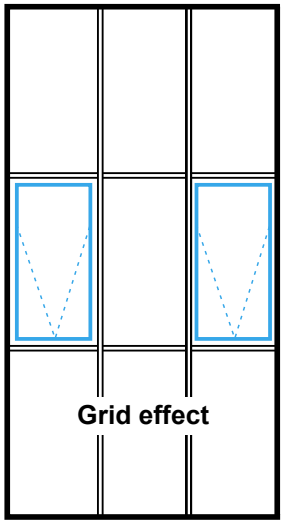
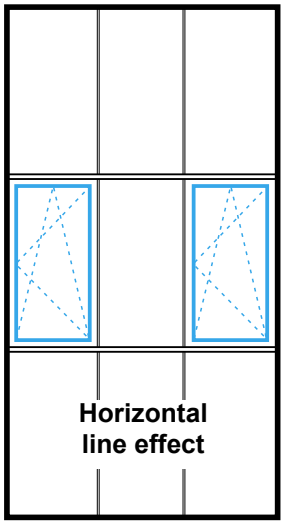
Géode

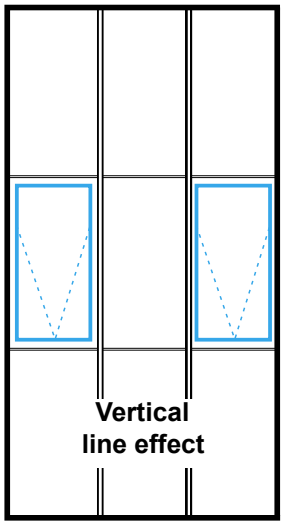
MX

Curtain-walls

Product concept







STRUCTURE

- 52mm module mullion-transom grid.
- 20-240mm depth.
- Steel reinforcement (standard).
- Aluminium sleeve sections.
- Square-cut mullion/transom linkage.
- Assembly using connectors fixed on the transom (punch tool machining) for face-on mounting. Specific junction piece for side-on mounting.
- Weathering on mullion/transom assemblies using connector plugs.
- Weathering of external structure ensured by aluminium pressure plates equipped with EPDM gaskets and plugs. Internally, EPDM gaskets are used. Any water ingress drained through pressure plate and horizontal caps.
- 6-32mm infill thicknesses.
- Thermal insulation ensured by a horizontal and vertical PVC spacer gasket installed between the structure and the external pressure plates.
- Clipped external aluminium caps.

EFFECTS

Grid effect

- Caps clipped onto aluminium pressure plates.
- Vertical 52mm x 23mm cap and horizontal 52mm x 15mm cap.
- Convex and concave angles from 0° minimum to 10° maximum.

Horizontal line effect

- Horizontal support identical to Grid effect version with a rounded or ogive-shaped transom cap.
- SSG type* CEKAL certified glass with arissed edges.
- 2-sided calculations according to DTU 39.
- Vertically, a security piece in the centre of the free edge holds infills for maximum deflection requirements exceeding 2mm.
- 22mm-wide face trim gasket between mullions.
- Concave and convex angles from 10° minimum to 20° maximum.

Vertical line effect

- Vertical support identical to Grid version with straight or rounded shaped cap.
- SSG type* CEKAL certified glass with arissed edges.

  2-sided calculations according to DTU 39.
- Horizontally, a pressure plate in the centre of the free edge holds infills for maximum deflection requirements exceeding 2mm.
- 22mm-wide face trim gasket between transoms.
- Weathering by low modulus silicone clear sealant on lower glazing.

CONCEALED VENTS

Bonding

SSG-type glazing is carried out by qualified companies following technical specifications and instructions from Technal and sealant suppliers.

All bonding is carried out onto aluminium profiles (manufactured under CEBTP control) using glazing silicone sealant (conforming to SNJF standards or technical specification).

This procedure is carried out according to a CSTB technical specification.

Glass

Conforms to technical specification, in particular CEKAL standard type SSG. 24mm or 31mm thickness, arissed on all four sides.

Tilt-and-turn

- Hinging hardware concealed in rebate.
- Stainless steel hardware with half-turn handle, rods, locking friction stay and foolproofing device.
- Sloped vent profiles allow opening handle clearance for ease of use.

Open-in

- Hinging hardware concealed in rebate.
- Opening with quarter-turn handle.
- Sloped vent profiles allow opening handle clearance for ease of use.

Bottom hung

- Sash bolt for bottom-hung vent.
- Concealed hinges, 2 friction stays concealed in rebate.
- Weatherproofing between fixed frame and vent frame using EPDM gasket.
- 300mm maximum opening.

Top-hung

- Adjustable stainless steel friction stay hardware.
- Multi-point central locking system.
- Weatherproofing between fixed frame and vent frame using EPDM gasket.

Fire access

- 31mm infill.
- Hinge hardware concealed in rebate.
- Complete locking system with square socket opening.

SSG type : Structural Sealant Glazing type*

**The conception and dimensions of the systems presented in this catalogue are in compliance with the French and / or European regulations applicable at the time of the realization of the document. The aluminium fabricator and/or consultant are entitled to check if these conceptions and dimensions have to be adapted according to local legislation and all other relevant norms and standards.*

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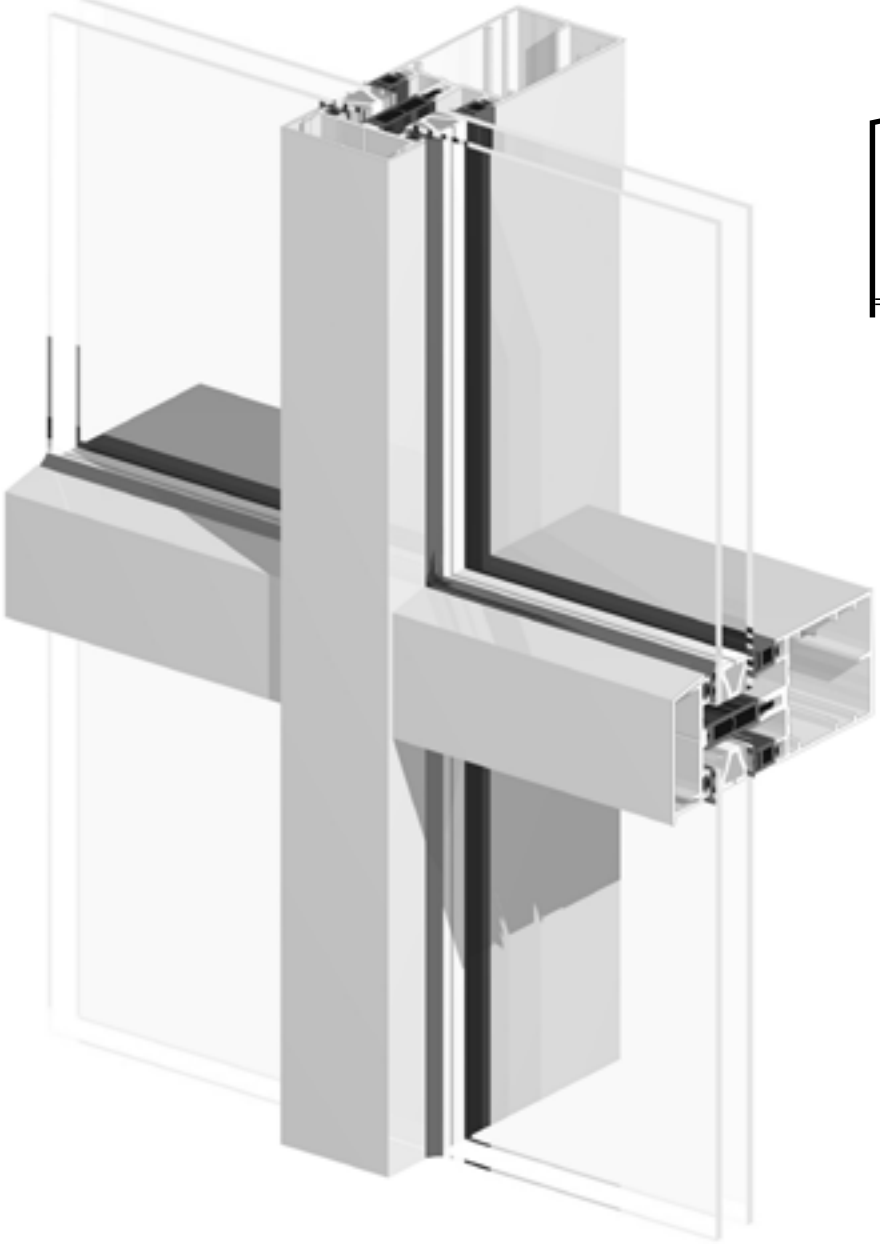
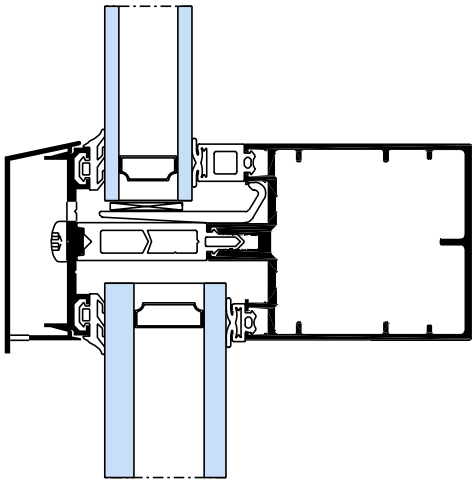
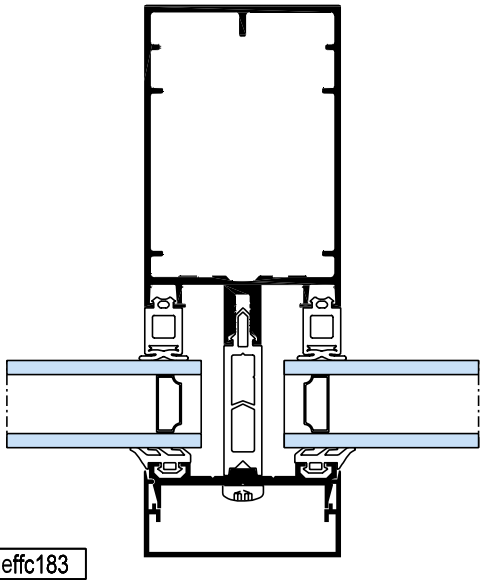
Product concept

Grid effect







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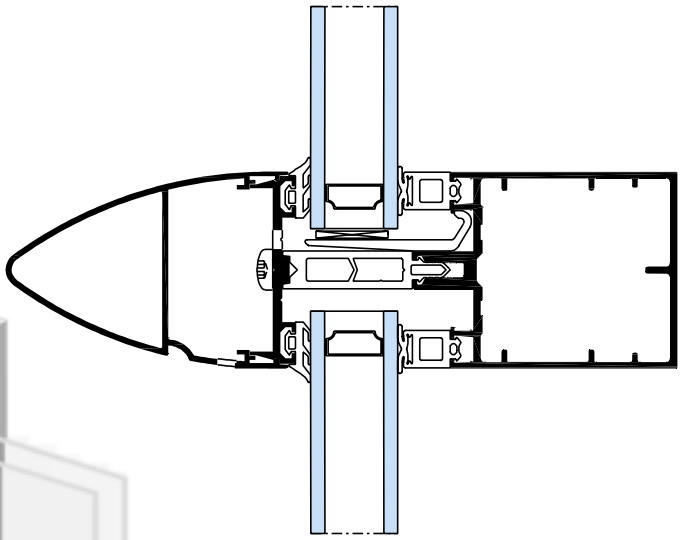
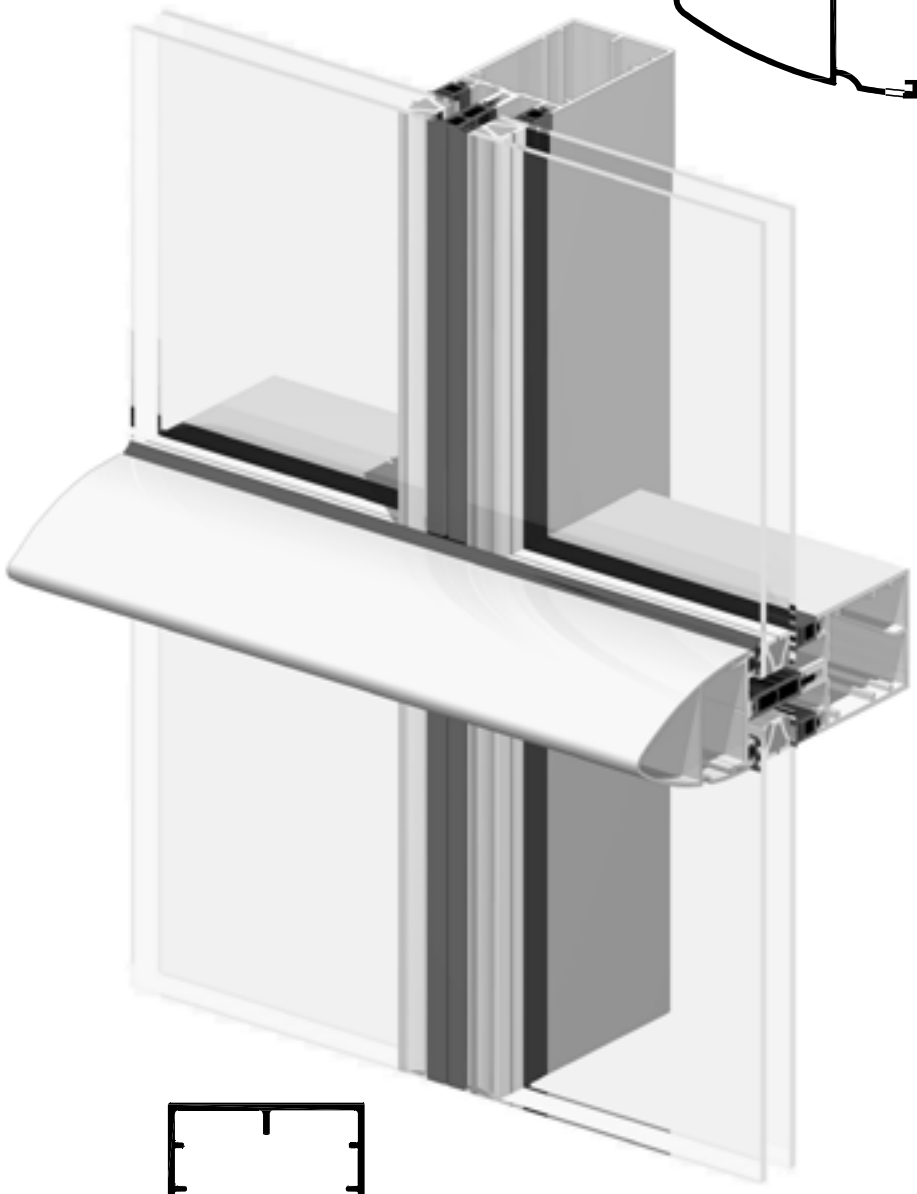
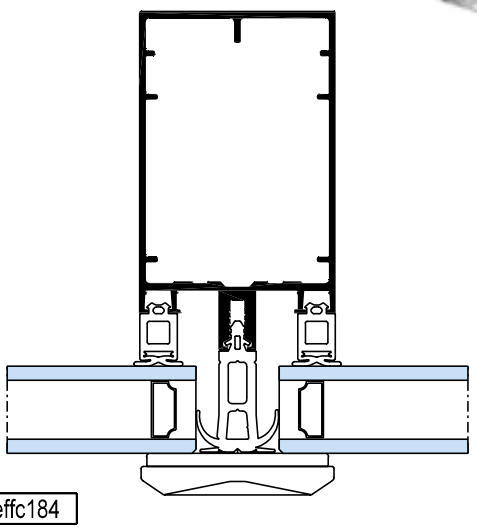
Product concept

Horizontal line effect







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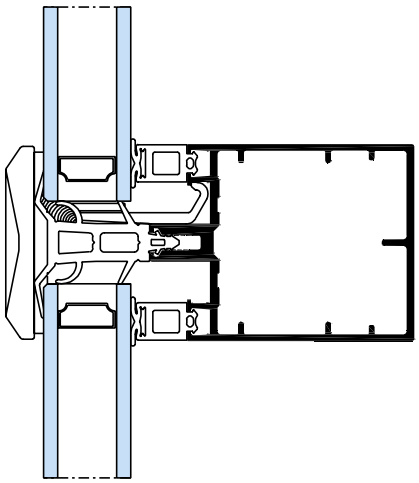
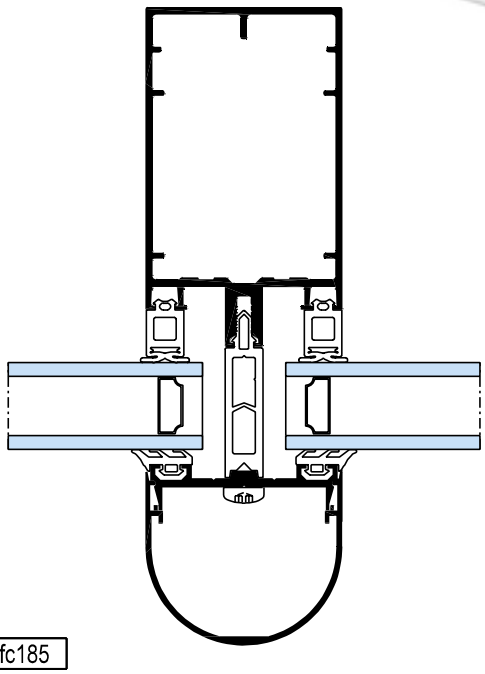
Product concept

Vertical line effect





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Performance

Acoustic performance

Measurements carried out at Saint Gobain Vitrage laboratory in Aubervilliers
(French standard NF S31-051, ISO 140) adjusted according to standard EN ISO 717-1

According to NAR 2000			Glass only		Grid façade			
Dimensions 1430 x 1425		Type of glass	Component mm	Rw (C;Ctr) dB	Rw (C;Ctr) dB	R_A dB	$R_{A,tr}$ dB	Measurement reference
Pressure plate	Top-hung	Climalit silence	8/6/44.2 (358 AP)	39 (-1 ; -5)	38 (-1 ; -3)	37	35	626108
		Climalit silence	10/12/44.2 (370 AP)	42 (-2 ; -5)	40 (-1 ; -2)	39	38	626109
	Tilt-and-turn	Climalit silence	8/6/44.2 (358 AP)	39 (-1 ; -5)	41 (-1 ; -4)	40	37	626095
		Climalit silence	10/12/44.2 (370 AP)	42 (-2 ; -5)	43 (-1 ; -3)	42	40	626096

Rw + C = R_A in dB : this is an absorbtion coefficient for BACKGROUND noise
R_A, tr in dB : this is an absorbtion coefficient for TRAFFIC noise

NAR : New Acoustic Reglementation

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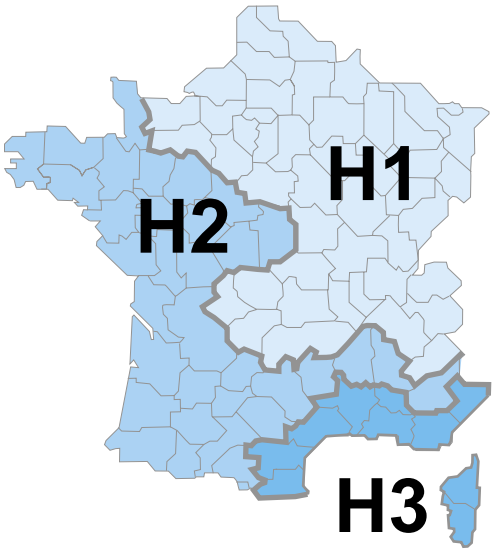
All test reports are available and downloadable in PDF format on our Internet site: www.technal.fr .

Thermal performance

Regulations

New building and extension with planning permission		H1 and H2 zones	H3 zone
Reference value: Transparent glass panes < 50% of the building's vertical walls	**Ucw**	2.4	2.6
Reference value: Transparent glass panes = 75% * of the building's vertical walls	**Ucw**	1.7	1.9
Reference value: Transparent glass panes = 100% * of the building's vertical walls	**Ucw**	1.4	1.5
Maximum permitted value with offsets (walls, floors, roofing)	**Ucw**	2.9	

* Calculate for intermediate percentages.



UCW values are validated in France by the CSTB ;

study reference: CTSB DERIBIV 2002-283

CSTB

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Performance

Thermal performance

Glass values

Glass	U-values according to glazing components Vertical glazing **Certified emissivity** according to ThU 2000 (EN673)						Glazing solar factors	
Note: no certified emissivity < 0.05 at end 2001	Emissivity	AIR or ARGON airspace (mm)	Glazing Ug- value with AIR airspace Glass thicknesses 4+4	 4+10	Glazing Ug- value with 85% ARGON + 15% AIR airspace 4+4	 4+10		g Glass thicknesses 4+4 / 6+6
standard clair	**0.89**	6	3.3				Climalit clair	0.76 / 0.72
		8	3.1				Antelio clair	/ 0.59
		10	2.9				Cool Lite SS108	/ 0.12
		12	2.8				Planibel clair	0.78 / 0.75
		14			2.8		Planibel vert	0.54 / 0.46
		16	2.7				Thermobel Stopsol gris	/ 0.32
Sunergy (Glaverbel)	**0.28**	6	2.8	2.8	2.5	2.5	Sunergy clair	0.54 / 0.52
		8	2.5	2.5	2.2	2.2	Sunergy vert	/ 0.33
		10	2.3	2.3	2.1	2.1	Sunergy azur	/ 0.36
		12	2.2	2.2	2.0	1.9		
		14	2.1	2.0	1.9	1.8		
		16	2.0	2.0	1.8	1.8		
		18	2.0	2.0	1.8	1.8		
		20	2.0	2.0	1.9	1.8		
Eko Plus (SGG) K Glass (Pilkington) Planibel K Glass (Glaverbel)	**0.16**	6	2.7	2.6	2.3	2.3	Eko Plus	0.69 / 0.65
		8	2.3	2.3	2.0	2.0	K Glass	0.72 / 0.69
		10	2.1	2.1	1.8	1.8	Planibel K Glass	0.74 / 0.71
		12	1.9	1.9	1.7	1.7		
		14	1.8	1.8	1.6	1.6		
		16	1.7	1.7	1.5	1.5		
		18	1.7	1.7	1.6	1.5		
		20	1.8	1.7	1.6	1.6		
Luxguard low e 1.1 Luxguard low e 1.3	**0.10**	6	2.6	2.5	2.2	2.2	Luxguard low e 1.1	0.65 /
		8	2.2	2.2	1.9	1.9	Luxguard low e 1.3	0.65 /
		10	2.0	2.0	1.7	1.7		
		12	1.8	1.8	1.5	1.5		
		14	1.7	1.6	1.4	1.4		
		16	1.6	1.6	1.4	1.4		
		18	1.6	1.6	1.4	1.4		
		20	1.6	1.6	1.4	1.4		
Planitherm (SGG) Planibel Plus (Glaverbel)	**0.09**	6	2.6	2.5	2.2	2.1	Planitherm	0.64 / 0.61
		8	2.2	2.2	1.9	1.8	Planibel Plus	0.67 / 0.65
		10	2.0	1.9	1.6	1.6		
		12	1.8	1.8	1.5	1.5		
		14	1.6	1.6	1.4	1.4		
		16	1.6	1.5	1.3	1.3		
		18	1.6	1.5	1.4	1.3		
		20	1.6	1.6	1.4	1.4		
Planitherm Futur N (SGG) Planistar (SGG) Planibel Top N Thermo Plus Energy (Glaverbel) Optitherm (Pilkington) i Plus (Interpane)	**0.05**	6	2.5	2.5	2.1	2.1	Planitherm Futur N	0.62 / 0.60
		8	2.1	2.1	1.8	1.7	Planistar	0.42 / 0.41
		10	1.9	1.9	1.5	1.5	Planibel Top N	0.64 / 0.62
		12	1.7	1.7	1.4	1.4	Thermo Plus Energy	0.39 / 0.39
		14	1.5	1.5	1.2	1.2	Optitherm	0.63 /
		16	1.4	1.4	1.2	1.2	iPlus	0.58 / 0.57
		18	1.4	1.4	1.2	1.2		
		20	1.5	1.4	1.2	1.2		

List given for example purposes, other glass available

List given for example purposes, other glass available

Shutter values

ΔR-values by shutter type according to ThU 2000 (EN 13125)	ΔR m^2.K/W
- Accordion-type jalousie, adujstable-louver shutter including all-metal external venetian blinds, swing shutters or fixed-louvred shutters	0.08
- Shutter without louvres in deployed position, aluminium roller shutters	0.14
- PVC roller shutter (e < or = 12 mm) - Sliding louvred shutter or PVC swing shutter, wood swing shutter (e < 22 mm)	0.19
- PVC sliding louvred shutter and wood swing shutter (e > 22 mm) - PVC roller shutter (e > 12 mm)	0.25
- TECHNAL ref V303 Roller louver blind PVC 40 mm - TECHNAL ref V302 Roller louver blind PVC 60 mm	0.22 0.26

S_W Solar factor and thermal transmission U_{cw}-values

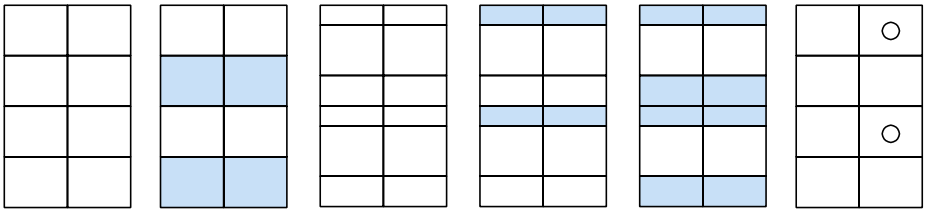
Geode light façade with pressure plate : grid and horizontal line effect

grid effect

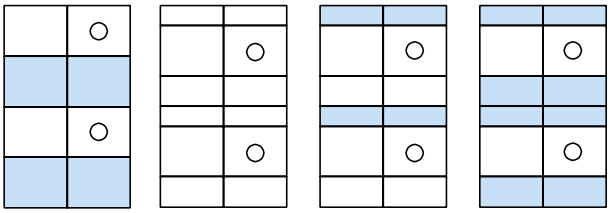
Mullion FM155 + cap 6617 + pressure plate FM221 + transom FM155 + cap 6667
for tilt-and-turn vent: mullion FM262 + FM267 + vent FM230
for top-hung vent: mullion FM155 + FM 233 + vent FM231 + FM220

horizontal line effect

Mullion FM155 + gasket JM017 + transom FM155 + caps FM237 + pressure plate FM221
for tilt-and-turn vent: mullion FM262 + FM267 + vent FM230
for top-hung vent: mullion FM155 + FM 233 + vent FM231 + FM220



S_g glazing solar factor (including any solar protection)	**S_W** Solar factors - **winter** for all joinery finishing	**S_W** Solar factors - **summer** for all joinery finishing
0.1	0.10	0.11
0.2	0.19	0.20
0.3	0.29	0.29
0.4	0.38	0.38
0.5	0.47	0.48
0.6	0.56	0.57
0.7	0.66	0.66
0.8	0.75	0.75



○ = vent

S_g glazing	**S_W** winter	**S_W** summer
0.1	0.10	0.12
0.2	0.19	0.21
0.3	0.28	0.29
0.4	0.37	0.38
0.5	0.45	0.47
0.6	0.54	0.55
0.7	0.63	0.64
0.8	0.72	0.73

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Performance

Thermal performance

GEODE **Grid effect** with pressure plate	U_{cw} **coefficient of bare façade** (W/m2.K) **bottom frame** 100% glazed		Mullion with fixed frames (Scale 1:2) Double glazed unit with aluminium spacer
2 frames per floor Width = 1.35 m x H = (1.50 + 1.50) m	Fixed frames	Fixed frames + vents	
U-value of glass unit centre pane (W/m².K)			
1.1 *	1.5	1.7	
1.2	1.6	1.8	
1.3	1.7	1.8	
1.4	1.8	1.9	
1.5	1.9	2.0	
1.6	2.0	2.1	
1.7	2.0	2.2	
1.8	2.1	2.3	
1.9	2.2	2.3	
2.0	2.3	2.4	
2.1	2.4	2.5	
2.2	2.5	2.6	
2.3	2.6	2.7	
2.4	2.6	2.8	
2.5	2.7	2.8	
2.6	2.8	2.9	
2.7	2.9		
2.8			
2.9			

alu | XPS Foam | alu

Glazed top frame + 32mm opaque bottom frame panel without timber frame Up = 0.85 - 75% glazed

3 frames per floor Width = 1.35 m x H Top frame = 0.85 m x H clear frame = 1.50 m x H Bottom frame = 1.00 m	**Top and bottom glazed lights** 100% glazed			
Ug-value of glass unit centre pane (W/m².K)	Fixed frames	Fixed frames + vents	Fixed frames	Fixed frames + vents
1.1 *	1.6	1.7	1.4	1.6
1.2	1.7	1.8	1.5	1.6
1.3	1.8	1.9	1.6	1.7
1.4	1.8	2.0	1.6	1.8
1.5	1.9	2.0	1.7	1.8
1.6	2.0	2.1	1.7	1.9
1.7	2.1	2.2	1.8	1.9
1.8	2.2	2.3	1.9	2.0
1.9	2.3	2.4	1.9	2.1
2.0	2.3	2.5	2.0	2.1
2.1	2.4	2.5	2.1	2.2
2.2	2.5	2.6	2.1	2.2
2.3	2.6	2.7	2.2	2.3
2.4	2.7	2.8	2.3	2.4
2.5	2.8	2.9	2.3	2.4
2.6	2.9		2.4	2.5
2.7	2.9		2.4	2.6
2.8			2.5	2.6
2.9			2.6	2.7

*not validated by CSTB: reading obtained solely with 2 low-emissivity layers

NB the silicone bonding of horizontal line effect glazing and vents does not allow Argon infills

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GEODE **Grid effect** with pressure plate U-value of glass unit centre pane (W/m².K)	**Opaque bottom frame** **2 frames per floor** Width = 1.35m x H clear frame = 1.50m x H bottom frame = 1.50m	**Example Insulating ACERMI-certified extruded polystyrene panels** **32mm thickness Up = 1.0** glass / XPS foam / alu	**Example Insulating ACERMI-certified extruded polystyrene panels** **32mm thickness Up = 0.85** alu / XPS foam / alu	**Opaque bottom frame** **3 frames per floor** Width = 1.35m x H top frame = 0.85m x H clear frame = 1.50m x H bottom frame = 1.00m	**Example Insulating ACERMI-certified extruded polystyrene panels** **32mm thickness Up = 1.0** glass / XPS foam / alu	**Example Insulating ACERMI-certified extruded polystyrene panels** **32mm thickness Up = 0.85** alu / XPS foam / alu
1.1 *	2 frames/floor fixed frames 50% glazed	1.4	1.3	3 frames/floor fixed frames 45% glazed	1.4	1.4
1.2		1.5	1.4		1.5	1.4
1.3		1.5	1.4		1.5	1.4
1.4		1.5	1.5		1.6	1.5
1.5		1.6	1.5		1.6	1.5
1.6		1.6	1.6		1.6	1.6
1.7		1.7	1.6		1.7	1.6
1.8		1.7	1.6		1.7	1.6
1.9		1.8	1.7		1.8	1.7
2.0		1.8	1.7		1.8	1.7
2.1		1.8	1.8		1.8	1.8
2.2		1.9	1.8		1.9	1.8
2.3		1.9	1.9		1.9	1.8
2.4		2.0	1.9		2.0	1.9
2.5		2.0	1.9		2.0	1.9
2.6		2.1	2.0		2.0	2.0
2.7		2.1	2.0		2.1	2.0
2.8		2.2	2.1		2.1	2.0
2.9		2.2	2.1		2.1	2.1
1.1 *	2 frames/floor fixed frames and vents 50% glazed	1.6	1.5	3 frames/floor fixed frames and vents 45% glazed	1.6	1.5
1.2		1.6	1.5		1.6	1.6
1.3		1.7	1.6		1.7	1.6
1.4		1.7	1.6		1.7	1.6
1.5		1.7	1.7		1.7	1.7
1.6		1.8	1.7		1.8	1.7
1.7		1.8	1.8		1.8	1.7
1.8		1.9	1.8		1.8	1.8
1.9		1.9	1.8		1.9	1.8
2.0		1.9	1.9		1.9	1.9
2.1		2.0	1.9		2.0	1.9
2.2		2.0	2.0		2.0	1.9
2.3		2.1	2.0		2.0	2.0
2.4		2.1	2.0		2.1	2.0
2.5		2.1	2.1		2.1	2.0
2.6		2.2	2.1		2.1	2.1
2.7		2.2	2.2		2.2	2.1
2.8		2.3	2.2		2.2	2.1
2.9		2.3	2.2		2.3	2.2

*not validated by CSTB: reading obtained solely with 2 low-emissivity layers

NB the silicone bonding of horizontal line effect glazing and vents does not allow Argon infills

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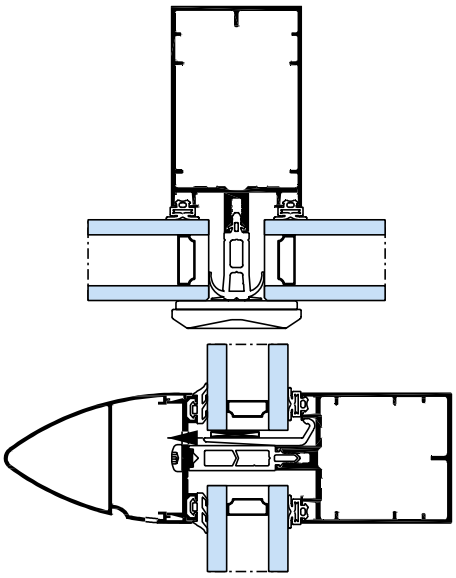
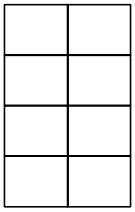
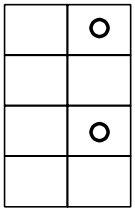
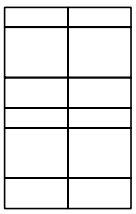
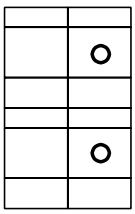
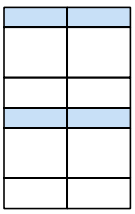
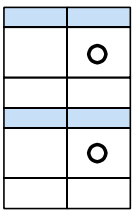
Performance

Thermal performance

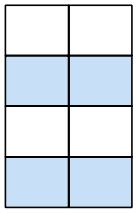
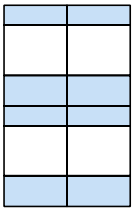
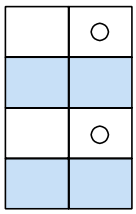
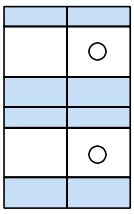
GEODE **Horizontal line effect** with pressure plate	U_{cw} coefficient of bare façade (W/m2.K) **bottom frame** 100% glazed		Mullion with fixed frames (Scale 1:3) Double glazed unit with aluminium spacer 
2 frames per floor Width = 1.35 m x H = (1.50 + 1.50) m	Fixed frames 	Fixed frames + vents 	
U-value of glass unit centre pane (W/m².K)			
1.3 *	1.7	1.8	
1.4	1.8	1.9	
1.5	1.9	2.0	
1.6	2.0	2.1	
1.7	2.1	2.1	
1.8	2.1	2.2	
1.9	2.2	2.3	
2.0	2.3	2.4	
2.1	2.4	2.5	
2.2	2.5	2.6	
2.3	2.6	2.7	
2.4	2.7	2.7	alu | XPS Foam | alu **Glazed top frame + 32mm opaque bottom frame panel without timber frame Up = 0.85 -** 75% glazed
2.5	2.8	2.8	
2.6	2.8	2.9	
2.7	2.9		
2.8			
2.9			

3 frames per floor Width = 1.35 m x H Top frame = 0.85 m x H clear frame = 1.50 m x H Bottom frame = 1.00 m	**Top and bottom glazed lights** 100% glazed			
	Fixed frames 	Fixed frames + vents 	Fixed frames 	Fixed frames + vents 
Ug-value of glass unit centre pane (W/m².K)				
1.3 *	1.8	1.9	1.6	1.7
1.4	1.9	1.9	1.6	1.7
1.5	1.9	2.0	1.7	1.8
1.6	2.0	2.1	1.8	1.9
1.7	2.1	2.2	1.8	1.9
1.8	2.2	2.3	1.9	2.0
1.9	2.3	2.4	1.9	2.0
2.0	2.4	2.4	2.0	2.1
2.1	2.5	2.5	2.1	2.2
2.2	2.5	2.6	2.1	2.2
2.3	2.6	2.7	2.2	2.3
2.4	2.7	2.8	2.3	2.3
2.5	2.8	2.9	2.3	2.4
2.6	2.9	2.9	2.4	2.5
2.7			2.5	2.5
2.8			2.5	2.6
2.9			2.6	2.7

*not validated by CSTB: reading obtained solely with 2 low-emissivity layers

NB the silicone bonding of horizontal line effect glazing and vents does not allow Argon infills

geffc011

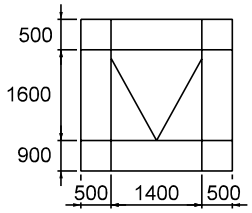
Horizontal line effect with pressure plate U-value of glass unit centre pane (W/m².K)	**Opaque bottom frame 2 frames per floor** Width = 1.35m x H clear frame = 1.50m x H bottom frame = 1.50m	**Example Insulating ACERMI-certified extruded polystyrene panels**		**Opaque bottom frame 3 frames per floor** Width = 1.35m x H top frame = 0.85m x H clear frame = 1.50m x H bottom frame = 1.00m	**Example Insulating ACERMI-certified extruded polystyrene panels**	
		32mm thickness Up = 1.0 glass / XPS foam / alu	**32mm thickness Up = 0.85** alu / XPS foam / alu		**32mm thickness Up = 1.0** glass / XPS foam / alu	**32mm thickness Up = 0.85** alu / XPS foam / alu
1.3 *	2 frames/floor fixed frames 50% glazed 	1.5	1.4	3 frames/floor fixed frames 45% glazed 	1.5	1.5
1.4		1.6	1.5		1.6	1.5
1.5		1.6	1.5		1.6	1.5
1.6		1.6	1.6		1.7	1.6
1.7		1.7	1.6		1.7	1.6
1.8		1.7	1.7		1.7	1.6
1.9		1.8	1.7		1.8	1.7
2.0		1.8	1.7		1.8	1.7
2.1		1.9	1.8		1.9	1.8
2.2		1.9	1.8		1.9	1.8
2.3		1.9	1.9		1.9	1.8
2.4		2.0	1.9		2.0	1.9
2.5		2.0	2.0		2.0	1.9
2.6		2.1	2.0		2.0	2.0
2.7		2.1	2.0		2.1	2.0
2.8		2.2	2.1		2.1	2.0
2.9		2.2	2.1		2.2	2.1
1.3 *	2 frames/floor fixed frames and vents 50% glazed 	1.6	1.6	3 frames/floor fixed frames and vents 45% glazed 	1.6	1.6
1.4		1.7	1.6		1.7	1.6
1.5		1.7	1.6		1.7	1.6
1.6		1.7	1.7		1.7	1.7
1.7		1.8	1.7		1.8	1.7
1.8		1.8	1.8		1.8	1.8
1.9		1.9	1.8		1.9	1.8
2.0		1.9	1.8		1.9	1.8
2.1		1.9	1.9		1.9	1.9
2.2		2.0	1.9		2.0	1.9
2.3		2.0	2.0		2.0	1.9
2.4		2,1	2.0		2.0	2.0
2.5		2,1	2.0		2.1	2.0
2.6		2.2	2.1		2.1	2.0
2.7		2.2	2.1		2.2	2.1
2.8		2.2	2.2		2.2	2.1
2.9		2.3	2.2		2.2	2.2
*not validated by CSTB: reading obtained solely with 2 low-emissivity layers						
NB the silicone bonding of horizontal line effect glazing and vents does not allow Argon infills						

TECHNAL®

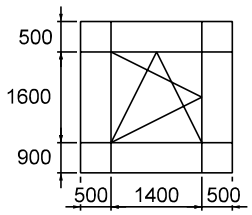
Performance

Weathering and durability performance

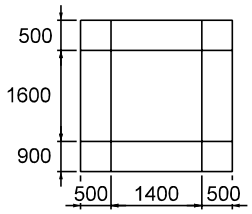
Grid effect façade with top-hung vent

Type of test	Results	Test report reference n
Air permeability, Watertightness, Wind load	Less than 4m3/h/m2 at 1200 Pa pressurisation Less than 4m3/H/m2 at 900 Pa depressurisation Watertight at 1200 Pa pressure No damage at sudden pressure of 2300 Pa No damage at sudden depressurisation of 1700 Pa Top-hung frame A3-EE-VE 	0111/01

Grid effect façade with tilt-and-turn vent

Type of test	Results	Test report reference n
Air permeability, Watertightness, Wind load	Less than 4m3/h/m2 at 1200 Pa pressurisation Less than 4m3/H/m2 at 900 Pa depressurisation Watertight at 1200 Pa pressure No damage at sudden pressure of 2300 Pa No damage at sudden depressurisation of 1700 Pa Tilt-and-turn frame A3-EE-VE 	0110/01

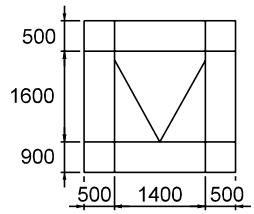
Grid effect façade with convex and concave angles

Type of test	Results	Test report reference n
Air permeability, Watertightness, Wind load	Less than 4m3/h/m2 at 1200 Pa pressurisation Less than 4m3/H/m2 at 900 Pa depressurisation Watertight at 1200 Pa pressure No damage at sudden pressure of 2300 Pa No damage at sudden depressurisation of 1700 Pa 	0109/01

Grid effect façade

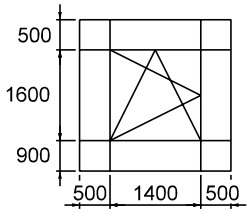
Type of test	Results	Test report reference n
Shock impact	Satisfactory No damage as a result of a dynamic shock	0106/02

Horizontal line effect façade with top-hung vent

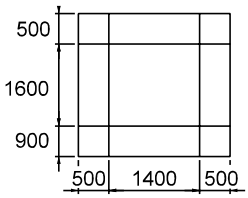
Type of test	Results	Test report reference n
Air permeability, Watertightness, Wind load	Less than 4m3/h/m2 at 1200 Pa pressurisation Less than 4m3/H/m2 at 900 Pa depressurisation Watertight at 1200 Pa pressure No damage at sudden pressure of 2300 Pa No damage at sudden depressurisation of 1700 Pa Top-hung frame A3-EE-VE 	0107/02

geffc015

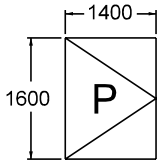
Horizontal line effect façade with tilt-and-turn vent

Type of test	Results	Test report reference n
Air permeability, Watertightness, Wind load	Less than 4m3/h/m2 at 1200 Pa pressurisation Less than 4m3/H/m2 at 900 Pa depressurisation Watertight at 1200 Pa pressure No damage at sudden pressure of 2300 Pa No damage at sudden depressurisation of 1700 Pa Tilt-and-turn frame A3-EE-VE 	0110/02

Horizontal line effect façade with 10° convex and concave angles

Type of test	Results	Test report reference n
Air permeability, Watertightness, Wind load	Less than 4m3/h/m2 at 1200 Pa pressurisation Less than 4m3/H/m2 at 900 Pa depressurisation Watertight at 750 Pa pressure No damage at sudden pressure of 2100 Pa No damage at sudden depressurisation of 1600 Pa 	0205/02

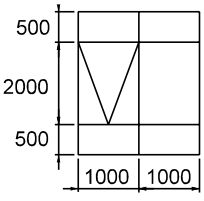
Horizontal line effect fire access

Type of test	Results	Test report reference n
Air permeability, Watertightness, Wind load	Air permeability : Class 4 Watertightness: Class 9A Wind load: Class C3 	0112/02

Horizontal line effect façade

Type of test	Results	Test report reference n
Shock impact	Satisfactory No damage as a result of a dynamic shock	0112/01

Vertical line effect façade with top-hung vent

Type of test	Results	Test report reference n
Air permeability, Watertightness, Wind load	Less than 4m3/h/m2 at 1200 Pa pressurisation Less than 4m3/H/m2 at 900 Pa depressurisation Watertight at 1200 Pa pressure No damage at sudden pressure of 2300 Pa No damage at sudden depressurisation of 1700 Pa Top-hung frame A3-EE-VE 	0203/01

All test reports are available and downloadable
in PDF format on our Internet site: www.technal.fr

geffc016

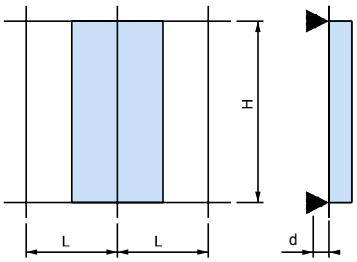
TECHNAL®

Usage charts

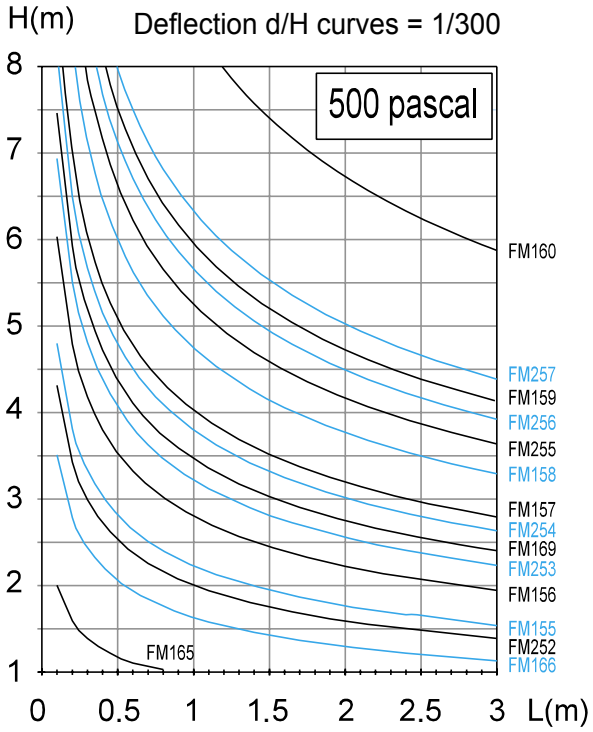
2 supports

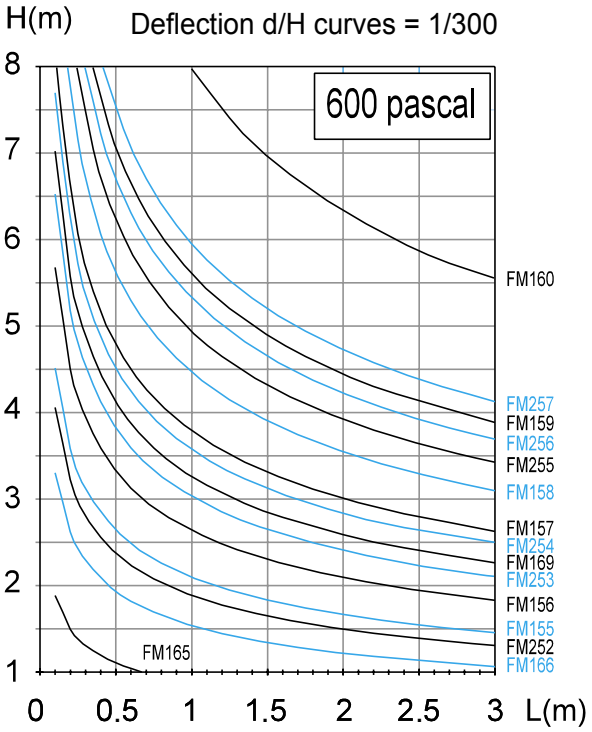
Rectangular type load

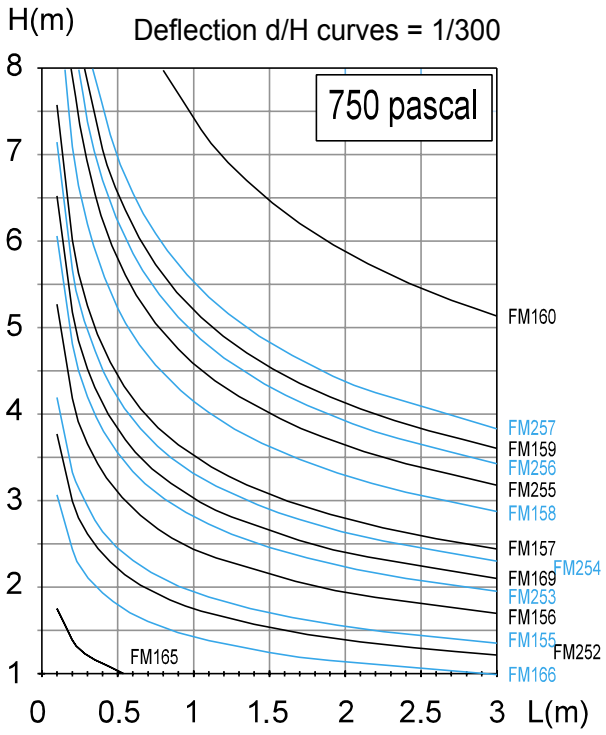
L(m) = mullion centres
H(m) = span between 2 supports

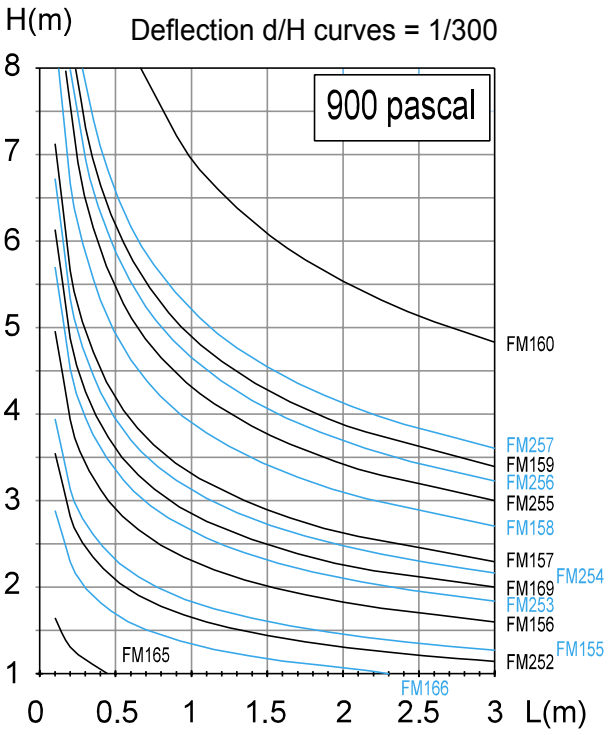


NB: Charts intended to enable mullion selection only.
Static calculation is required to demonstrate resistance and stability.









geffc001

Usage charts

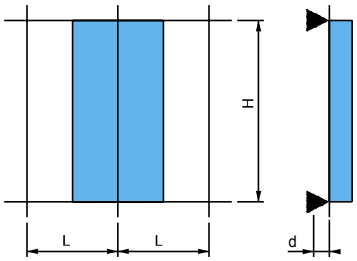
2 supports reinforced

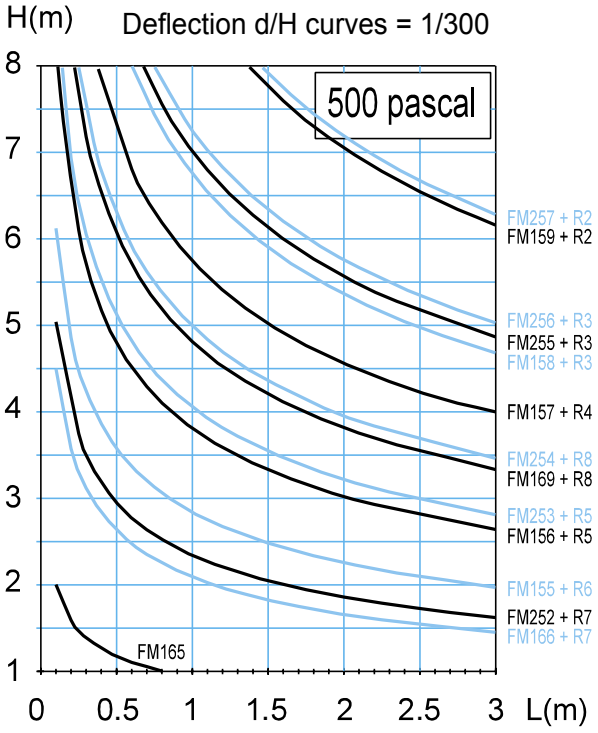
Rectangular type load

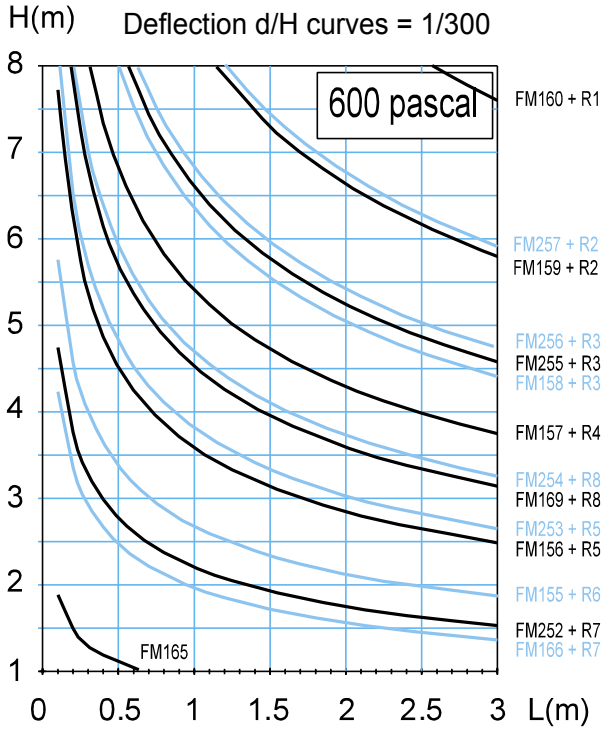
L(m) = mullion centres
H(m) = span between 2 supports

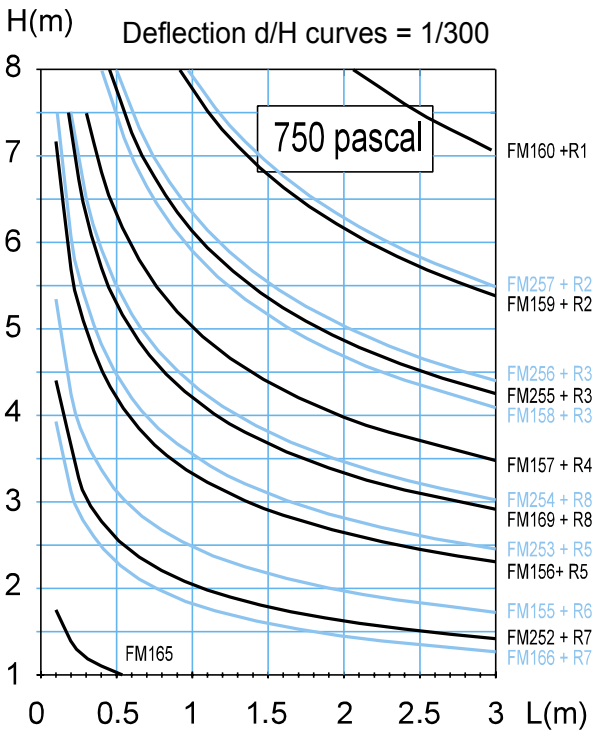
NB: Charts intended to enable mullion selection only.
Static calculation is required to demonstrate resistance and stability.

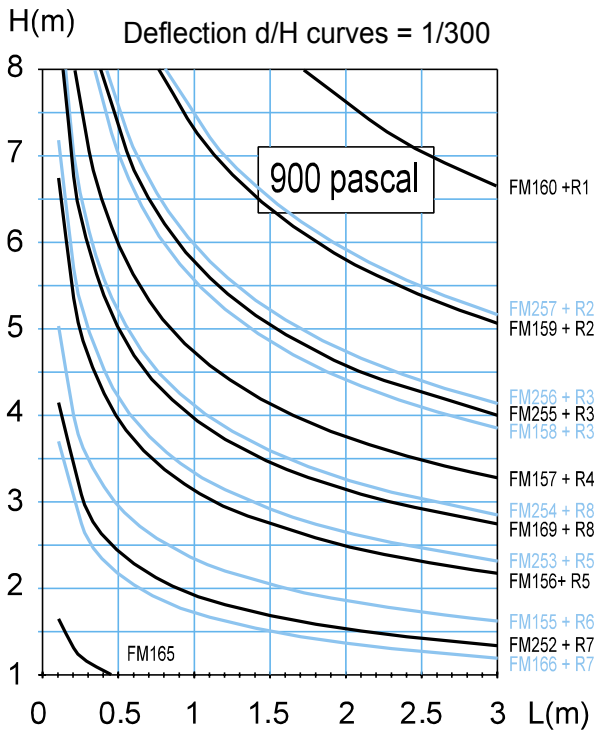
R1=140x40x4 +70x40x4 R2=R3+R6 R3=120x40x4 R4=100x40x4
R5=60x40x4 R6=40x40x4 R7=40x20x4 R8=80x40x4
R9=60x14 R10=120x12 R11=80x14











geffc002

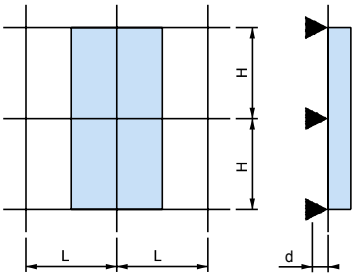
TECHNAL®

Usage charts

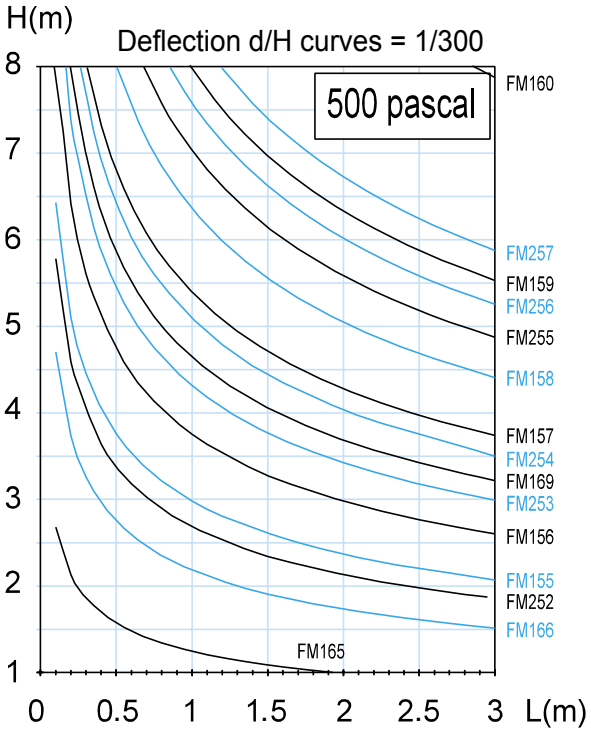
3 supports

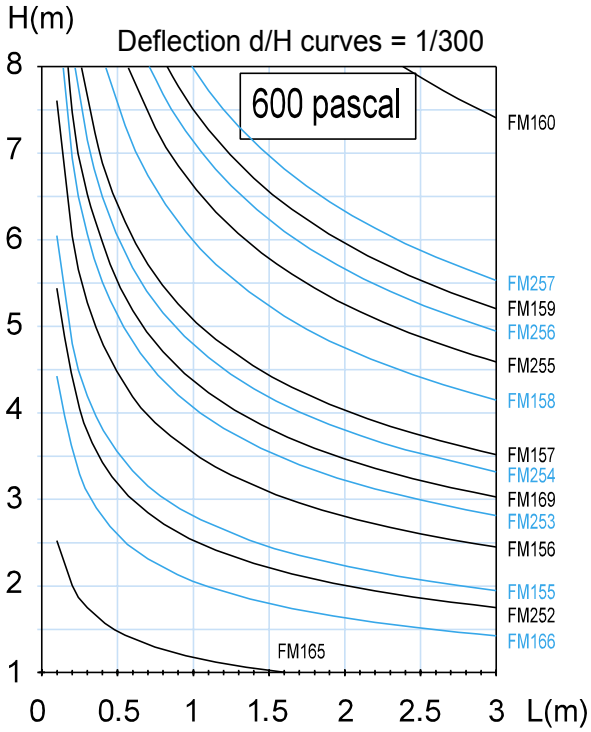
Mullion with 3 equidistant supports
Rectangular type load

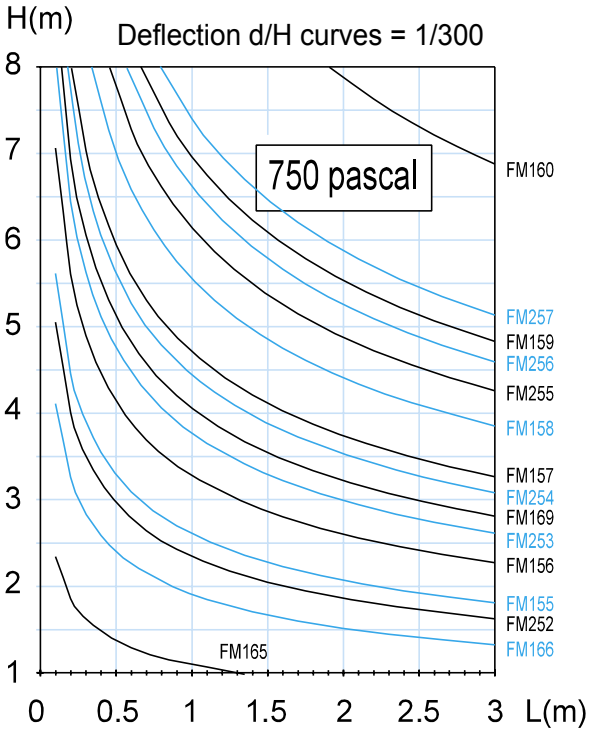
L(m) = mullion centres
H(m) = span between 2 supports

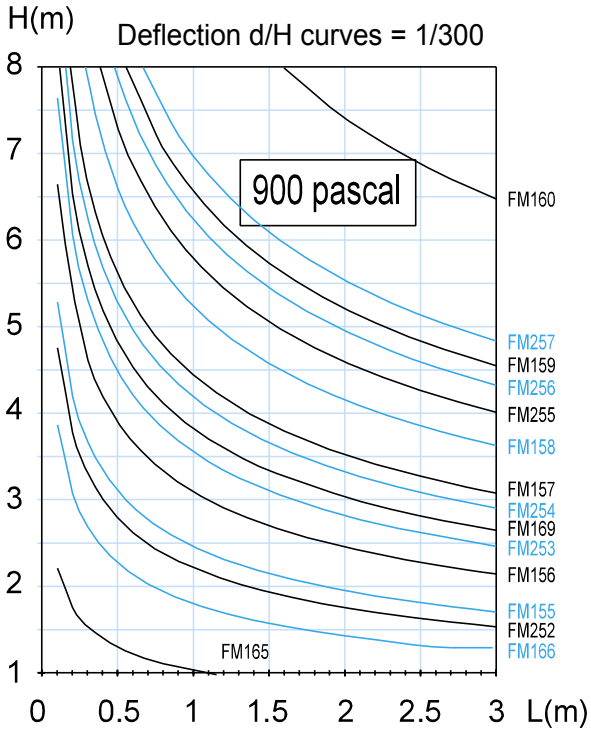


NB: Charts intended to enable mullion selection only.
Static calculation is required to demonstrate resistance and stability.









geffc003

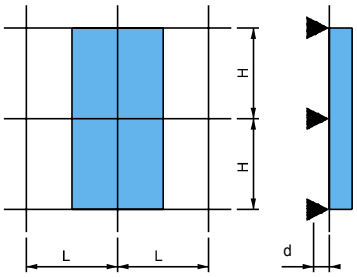
Usage charts

3 supports reinforced

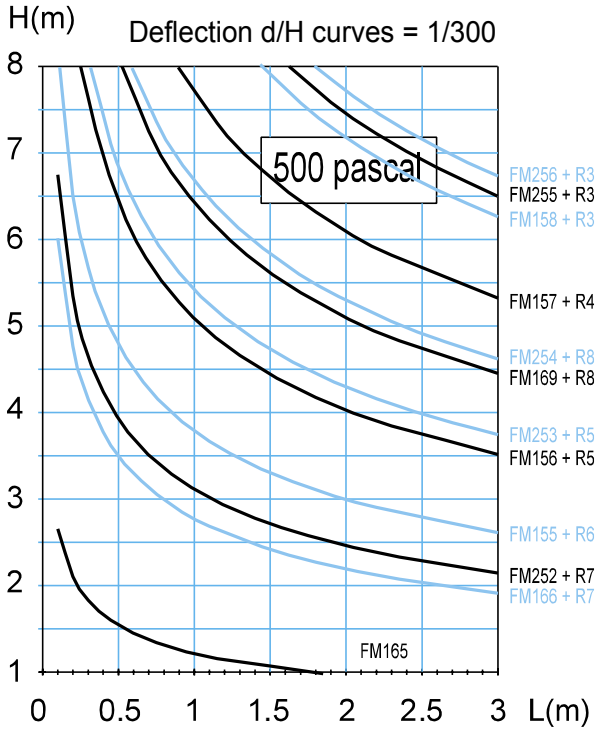
Mullion with 3 equidistant supports
Rectangular type load

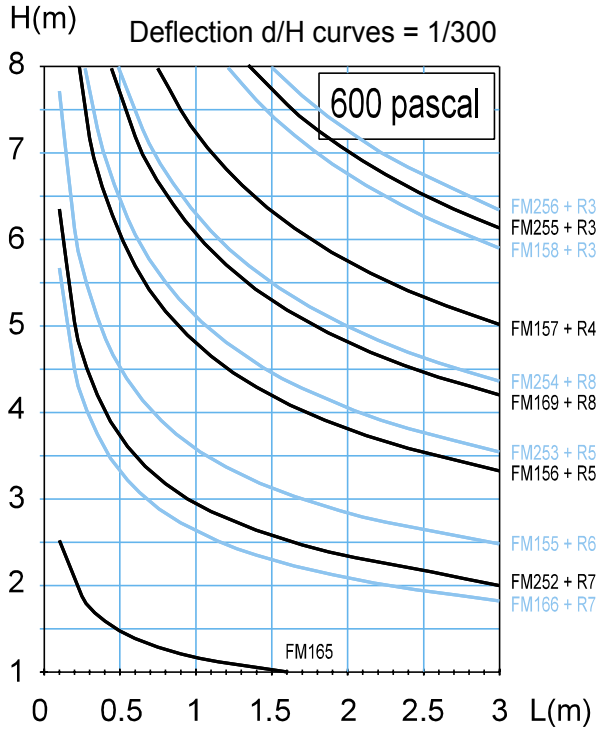
L(m) = mullion centres
H(m) = span between 2 supports

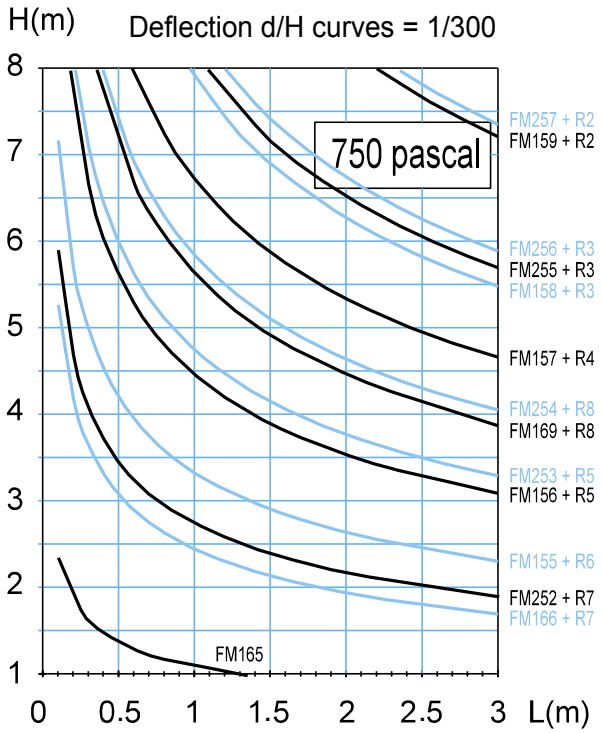
NB: Charts intended to enable mullion selection only.
Static calculation is required to demonstrate resistance and stability.

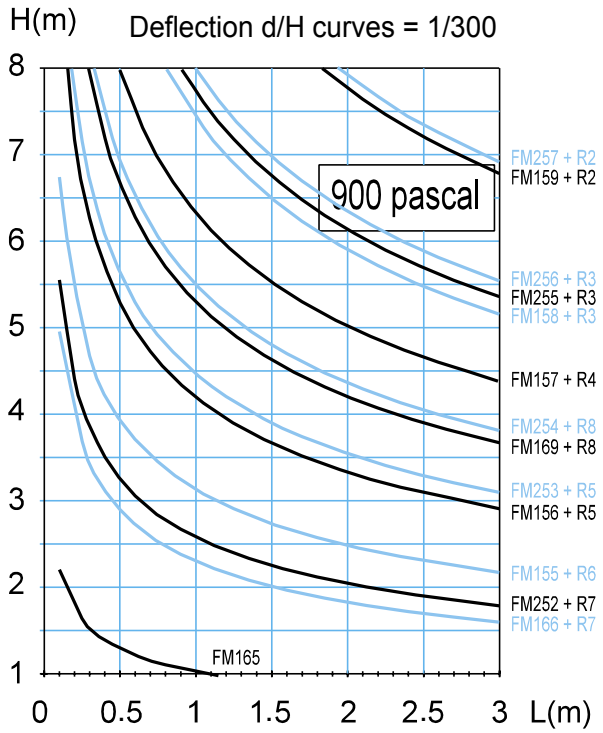


R1=140x40x4 +70x40x4 R2=R3+R6 R3=120x40x4 R4=100x40x4
R5=60x40x4 R6=40x40x4 R7=40x20x4 R8=80x40x4
R9=60x14 R10=120x12 R11=80x14









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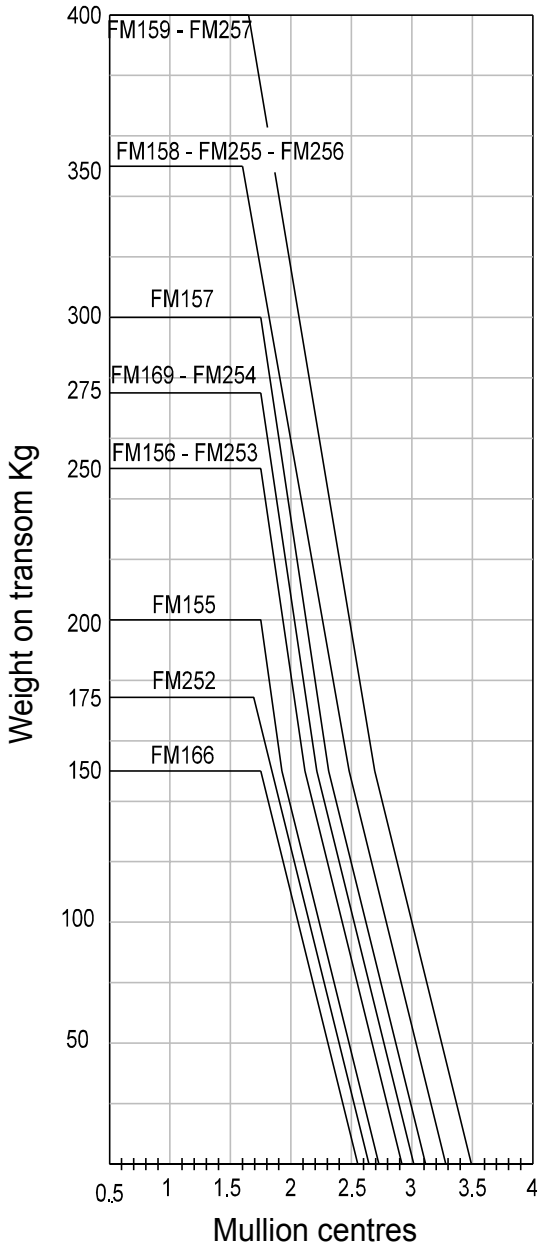
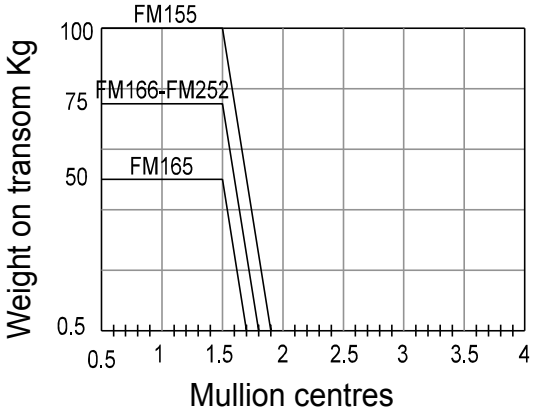
Usage charts

Transom connectors

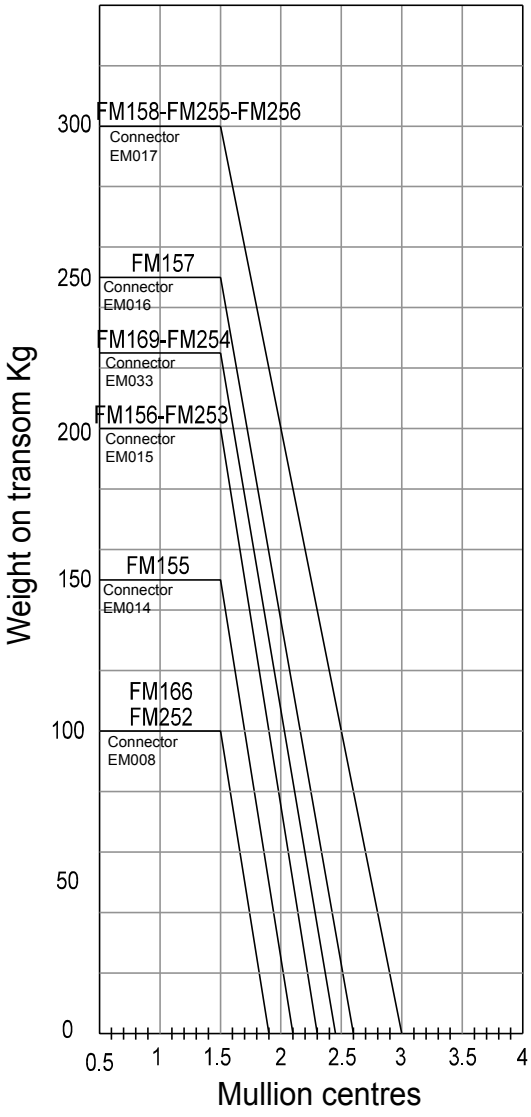
With anti-rotation spigot EM009



Face mounting with EM009 connector Without anti-rotation spigot



Side mounting with connector according to profile



Mullion selection should be based on charts only

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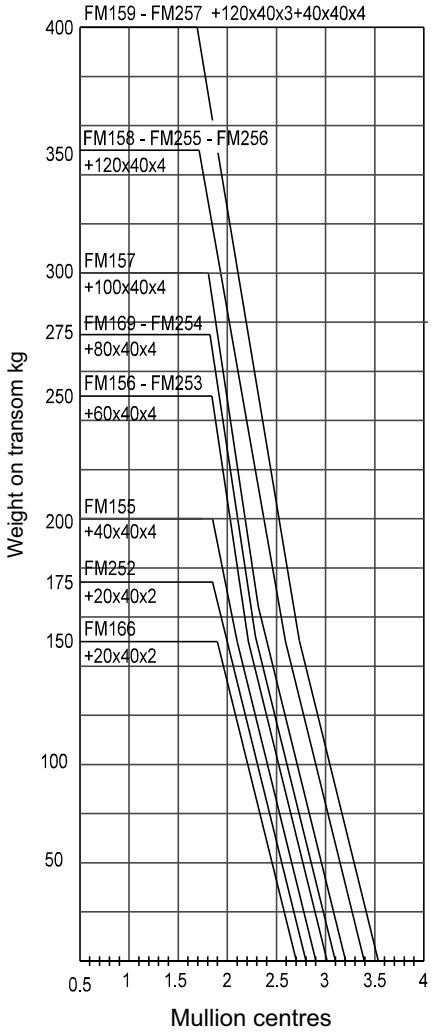
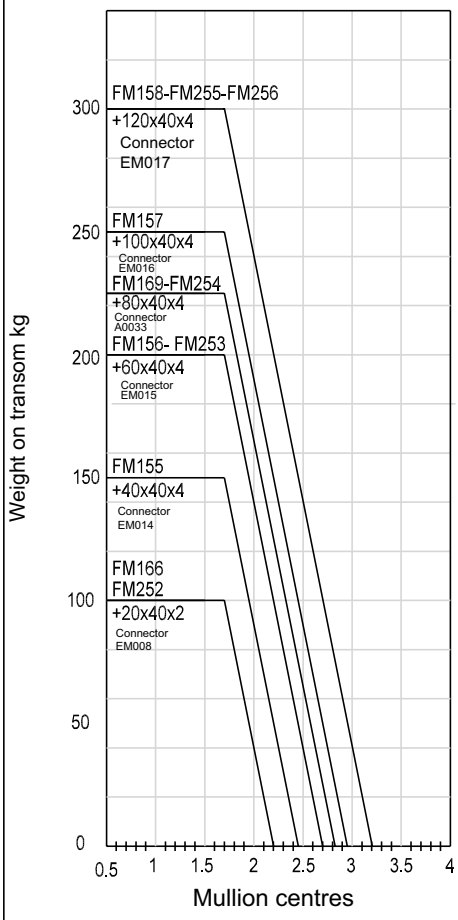
Usage charts

Reinforced transoms

With anti-rotation spigot EM009

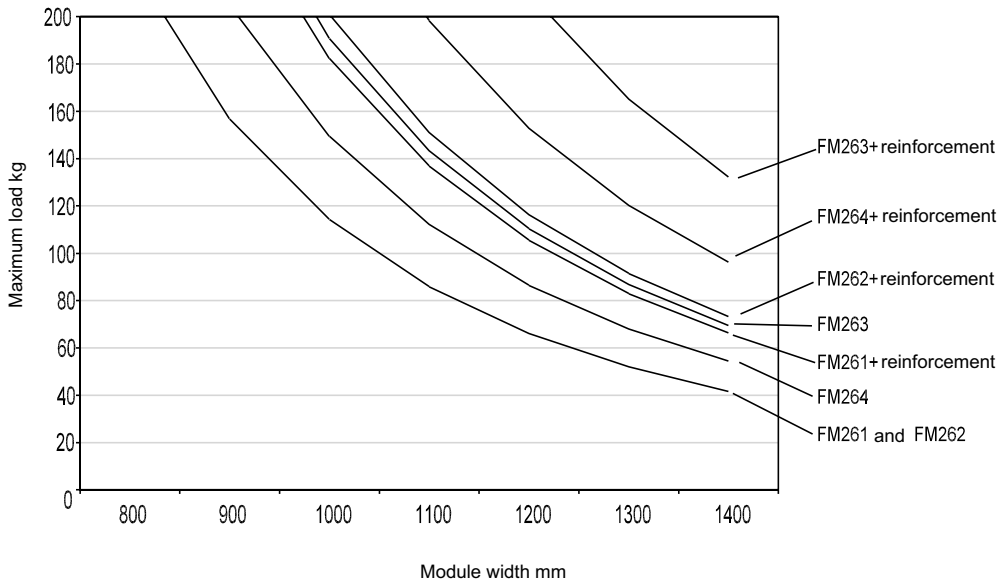


Face mounting, connector according to profiles



Mullion selection should be based on charts only

USAGE CHARTS FOR TRANSOMS AND REINFORCED TRANSOMS



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TECHNAL®

Usage charts

Examples of use

Single glass	Pressure or depressure values							
Glass thickness	500	600	700	800	900	1000	1100	1200
3	0.53 to 0.61	0.51 to 0.56	0.52	0.49	0.46	0.43	0.41	0.40
4	0.66 to 0.83	0.63 to 0.76	0.61 to 0.70	0.59 to 0.66	0.57 to 0.62	0.59	0.56	0.54
5	0.79 to 1.05	0.76 to 0.96	0.73 to 0.89	0.70 to 0.83	0.68 to 0.78	0.67 to 0.74	0.65 to 0.71	0.68
6	0.91 to 1.27	0.87 to 1.16	0.84 to 1.07	0.81 to 1.00	0.79 to 0.95	0.77 to 0.90	0.75 to 0.86	0.73 to 0.82

Usage range with 1 pressure plate (see example calculation)

Maximum glazing height on 2 sides unsupported by pressure plate

CALCULATION EXAMPLE

Project with horizontal line effect for the whole façade: grid width 1.5m grid height 1.20m in Marseille for a building 15m high

Assumed pressure for example purposes = 1200 pascals

Selection in the chart for double glazing for a value of 1.2 (free height)

option 1: with one pressure plate

0.99 <*1.20*>1.27 => 1.2 in range => 1 pressure plate for 8mm + 6mm double glazing

option 2: without pressure plate => choose the range immediately above 1.27

1.28 **-1.83 => no pressure plate and 10mm + 10mm double glazing**

Chart reading

8+6 glazing under 1200 Pa for 0.99 to 1.27 with one pressure plate

less than 0.99: possible without pressure plate

0.99 to 1.27

more than 1.27: impossible with 8+6 glazing

Double glazing	Pressure or depressure values							
Glazing components	500	600	700	800	900	1000	1100	1200
4+4	0.79 to 1.11	0.76 to 1.01	0.73 to 0.94	0.70 to 0.88	0.68 to 0.83	0.66 to 0.79	0.65 to 0.75	0.63 to 0.72
5+5	0.94 to 1.40	0.90 to 1.28	0.87 to 1.19	0.84 to 1.11	0.81 to 1.05	0.79 to 0.99	0.77 to 0.95	0.76 to 0.91
6+4	0.97 to 1.40	0.93 to 1.28	0.89 to 1.19	0.86 to 1.11	0.84 to 1.05	0.82 to 0.99	0.80 to 0.95	0.78 to 0.91
6+6	1.09 to 1.69	1.04 to 1.55	1.00 to 1.43	0.96 to 1.34	0.94 to 1.26	0.91 to 1.20	0.89 to 1.14	0.87 to 1.09
8+6	1.23 to 1.97	1.18 to 1.8	1.1	0 to 1.56	1.07 to 1.47	1.04 to 1.39	1.01 to 1.33	0.99 to 1.27
8+8	1.34 to 2	1.28 to 2	1.23 to 1.90	1.19 to 1.78	1.16 to 1.68	1.13 to 1.59	1.10 to 1.52	1.08 to 1.45
10+8	1.49 to 2	1.42 to 2	1.37 to 2	1.32 to 2	1.28 to 1.89	1.25 to 1.80	1.22 to 1.71	1.19 to 1.64
10+10	1.60 to 2	1.52 to 2	1	42 to 2	1.38 to 2	1.34 to 2	1.31 to 1.91	1.28 to 1.83
10+12	1.73 to 2	1.65 to 2	1.59 to 2	1.54 to 2	1.49 to 2	1.45 to 2	1.42 to 2	1.39 to 2
12+12	1.84 to 2	1.76 to 2	1.69 to 2	1.63 to 2	1.59 to 2	1.54 to 2	1.51 to 2	1.48 to 2
SP510+4	0.87 to 1.41	0.84 to 1.29	0.80 to 1.19	0.78 to 1.11	0.76 to 1.05	0.74 to 1.00	0.72 to 0.95	0.70 to 0.91
SP510+6	1.02 to 1.70	0.97 to 1.55	0.94 to 1.44	0.91 to 1.35	0.88 to 1.27	0.86 to 1.20	0.84 to 1.15	0.82 to 1.10
SP615+6	1.06 to 1.89	1.02 to 1.72	0.98 to 1.60	0.95 to 1.49	0.92 to 1.41	0.89 to 1.34	0.87 to 1.27	0.85 to 1.22
SP615+8	1.22 to 2	1.16 to 1.98	1.12 to 1.83	1.08 to 1.71	1.05 to 1.61	1.03 to 1.53	1.00 to 1.46	0.98 to 1.40
Grid surface	Maximum S = 3.2 m²		Maximum S = 2.4 m²		Maximum S = 2 m²		Maximum S = 1.8 m²	

option 1

option 2

Range possible with use of 1 pressure plate

NB determine the pressure of the site using all coefficients (height effect, site effect, internal and external coefficients, in upper angles, etc)

Maximum glazing height 2.00m, please consult us for larger dimensions

Usage charts

Determination of free height for horizontal line effect with or without pressure plate

Single glass

Glass thickness	Pressure or depressure values 500	600	700	800	900	1000	1100	1200
3	0.53 to 0.61	0.51 to 0.56	0.52	0.49	0.46	0.43	0.41	0.40
4	0.66 to 0.83	0.63 to 0.76	0.61 to 0.70	0.59 to 0.66	0.57 to 0.62	0.59	0.56	0.54
5	0.79 to 1.05	0.76 to 0.96	0.73 to 0.89	0.70 to 0.83	0.68 to 0.78	0.67 to 0.74	0.65 to 0.71	0.68
6	0.91 to 1.27	0.87 to 1.16	0.84 to 1.07	0.81 to 1.00	0.79 to 0.95	0.77 to 0.90	0.75 to 0.86	0.73 to 0.82
8	1.13 to 1.69	1.08 to 1.54	1.04 to 1.43	1.00 to 1.33	0.97 to 1.26	0.95 to 1.19	0.93 to 1.14	0.91 to 1.09
10	1.34 to 2	1.28 to 1.94	1.23 to 1.80	1.19 to 1.68	1.16 to 1.58	1.13 to 1.50	1.10 to 1.43	1.08 to 1.3
12	1. 54 to 2	1. 48 to 2	1.42 to 2	1.37 to 2	1.33 to 1.91	1.30 to 1.81	1.27 to 1.73	1.24 to 1.65
15	1.81 to 2	1.73 to 2	1.67 to 2	1.61 to 2	1.57 to 2	1.53 to 2	1.49 to 2	1.46 to 2
19	2.00	2.00	1.96 to 2	1.90 to 2	1.84 to 2	1.79 to 2	1.75 to 2	1.71 to 2
Grid surface	Maximum S = 3.2 m²		Maximum S = 2.4 m²		Maximum S = 2 m²		Maximum S = 1.8 m²	

Usage range with 1 pressure plate — Maximum glazing height on 2 sides unsupported by pressure plate

Laminated single glass

Glazing components	Pressure or depressure values 500	600	700	800	900	1000	1100	1200
33.2	0.73 to 0.94	0.70 to 0.86	0.67 to 0.8	0.65 to 0.74	0.63 to 0.70	0.61 to 0.67	0.64	0.61
44.2	0.98 to 1.40	0.94 to 1.28	0.90 to 1.18	0.87 to 1.11	0.85 to 1.04	0.82 to 0.99	0.80 to 0.94	0.79 to 0.9
55.2	1.09 to 1.62	1.04 to 1.48	1.01 to 1.37	0.97 to 1.28	0.94 to 1.21	0.92 to 1.14	0.90 to 1.09	0.88 to 1.04
66.2	1.26 to 1.95	1.20 to 1.78	1.16 to 1.65	1.12 to 1.55	1.09 to 1.46	1.06 to 1.38	1.03 to 1.32	1.01 to 1.26
SP 510	0.92 to 1.28	0.88 to 1.17	0.84 to 1.08	0.82 to 1.01	0.79 to 0.96	0.77 to 0.91	0.75 to 0.86	0.74 to 0.83
SP 615	1.07 to 1.56	1.02 to 1.43	0.98 to 1.32	0.95 to 1.24	0.92 to 1.16	0.90 to 1.11	0.87 to 1.05	0.86 to 1.01
Grid surface	Maximum S = 3.2 m²		Maximum S = 2.4 m²		Maximum S = 2 m²		Maximum S = 1.8 m²	

Usage range with 1 pressure plate — Maximum glazing height on 2 sides unsupported by pressure plate

Tempered single glass

Glass thickness	Pressure or depressure values 500	600	700	800	900	1000	1100	1200
4	0.79 to 1.04	0.75 to 0.95	0.72 to 0.88	0.70 to 0.82	0.71 to 0.83	0.69 to 0.79	0.68 to 0.75	0.66 to 0.72
5	0.94 to 1.31	0.89 to 1.20	0.86 to 1.11	0.83 to 1.04	0.85 to 1.05	0.83 to 0.99	0.81 to 0.95	0.79 to 0.91
6	1.08 to 1.59	1.03 to 1.45	0.99 to 1.34	0.96 to 1.26	0.98 to 1.26	0.95 to 1.20	0.93 to 1.14	0.91 to 1.09
8	1.33 to 2	1.27 to 1.93	1.23 to 1.78	1.19 to 1.67	1.21 to 1.68	1.18 to 1.59	1.15 to 1.52	1.13 to 1.45
10	1.59 to 2	1.52 to 2	1.46 to 2	1.41 to 2	1.44 to 2	1.40 to 2	1.37 to 1.91	1.34 to 1.83
12	1.83 to 2	1.74 to 2	1.68 to 2	1.62 to 2	1.65 to 2	1.61 to 2	1.57 to 2	1.54 to 2
Grid surface	Maximum S = 3.2 m²		Maximum S = 2.4 m²		Maximum S = 2 m²		Maximum S = 1.8 m²	

Usage range with 1 pressure plate

Double glass

Glazing components	Pressure or depressure values 500	600	700	800	900	1000	1100	1200
4+4	0.79 to 1.11	0.76 to 1.01	0.73 to 0.94	0.70 to 0.88	0.68 to 0.83	0.66 to 0.79	0.65 to 0.75	0.63 to 0.72
5+5	0.94 to 1.40	0.90 to 1.28	0.87 to 1.19	0.84 to 1.11	0.81 to 1.05	0.79 to 0.99	0.77 to 0.95	0.76 to 0.91
6+4	0.97 to 1.40	0.93 to 1.28	0.89 to 1.19	0.86 to 1.11	0.84 to 1.05	0.82 to 0.99	0.80 to 0.95	0.78 to 0.91
6+6	1.09 to 1.69	1.04 to 1.55	1.00 to 1.43	0.96 to 1.34	0.94 to 1.26	0.91 to 1.20	0.89 to 1.14	0.87 to 1.09
8+6	1.23 to 1.97	1.18 to 1.8	1.13 to 1.67	1.10 to 1.56	1.07 to 1.47	1.04 to 1.39	1.01 to 1.33	0.99 to 1.27
8+8	1.34 to 2	1.28 to 2	1.23 to 1.90	1.19 to 1.78	1.16 to 1.68	1.13 to 1.59	1.10 to 1.52	1.08 to 1.45
10+8	1.49 to 2	1.42 to 2	1.37 to 2	1.32 to 2	1.28 to 1.89	1.25 to 1.80	1.22 to 1.71	1.19 to 1.64
10+10	1.60 to 2	1.52 to 2	1.47 to 2	1.42 to 2	1.38 to 2	1.34 to 2	1.31 to 1.91	1.28 to 1.83
10+12	1.73 to 2	1.65 to 2	1.59 to 2	1.54 to 2	1.49 to 2	1.45 to 2	1.42 to 2	1.39 to 2
12+12	1.84 to 2	1.76 to 2	1.69 to 2	1.63 to 2	1.59 to 2	1.54 to 2	1.51 to 2	1.48 to 2
SP510+4	0.87 to 1.41	0.84 to 1.29	0.80 to 1.19	0.78 to 1.11	0.76 to 1.05	0.74 to 1.00	0.72 to 0.95	0.70 to 0.91
SP510+6	1.02 to 1.70	0.97 to 1.55	0.94 to 1.44	0.91 to 1.35	0.88 to 1.27	0.86 to 1.20	0.84 to 1.15	0.82 to 1.10
SP615+6	1.06 to 1.89	1.02 to 1.72	0.98 to 1.60	0.95 to 1.49	0.92 to 1.41	0.89 to 1.34	0.87 to 1.27	0.85 to 1.22
SP615+8	1.22 to 2	1.16 to 1.98	1.12 to 1.83	1.08 to 1.71	1.05 to 1.61	1.03 to 1.53	1.00 to 1.46	0.98 to 1.40
Grid surface	Maximum S = 3.2 m²		Maximum S = 2.4 m²		Maximum S = 2 m²		Maximum S = 1.8 m²	

Usage range with 1 pressure plate

NB determine the pressure of the site using all coefficients (height effect, site effect, internal and external coefficients, in upper angles, etc)

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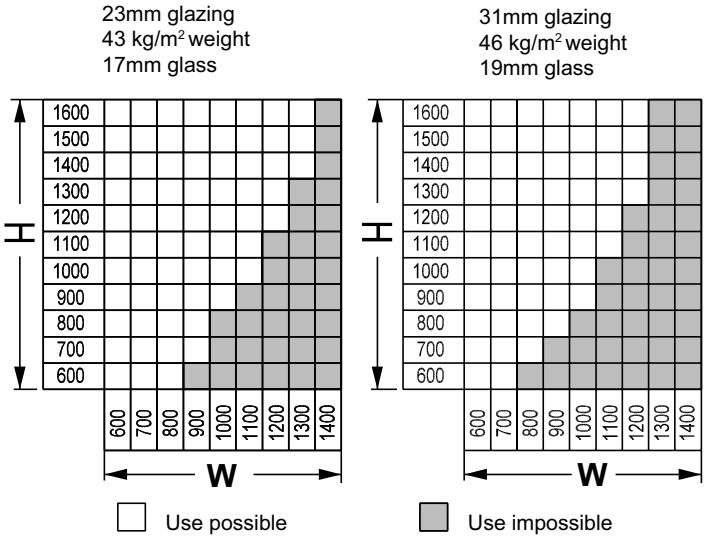
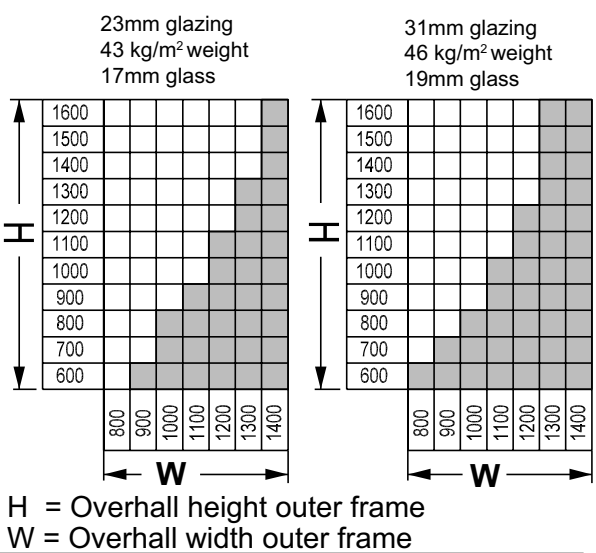
Usage charts

Vents

In-opening



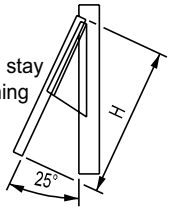
Tilt-and-turn



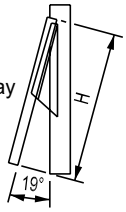
H = Overhall height outer frame
W = Overhall width outer frame

Top-hung

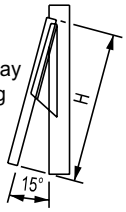
Ref KM097
Small size stainless friction stay
25° maximum lower opening
to security stop

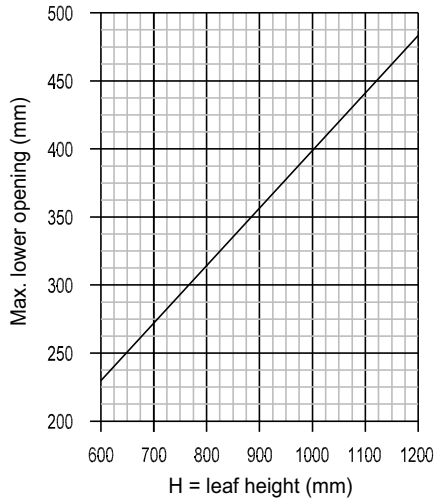


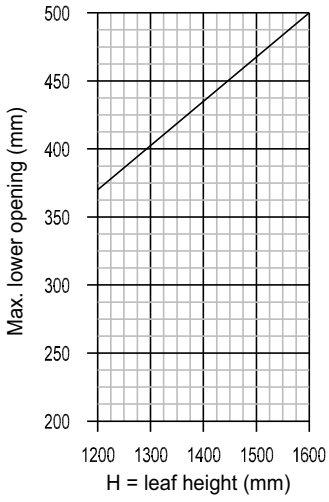
Ref KM604
Medium size stainless friction stay
19° maximum lower opening
to security stop

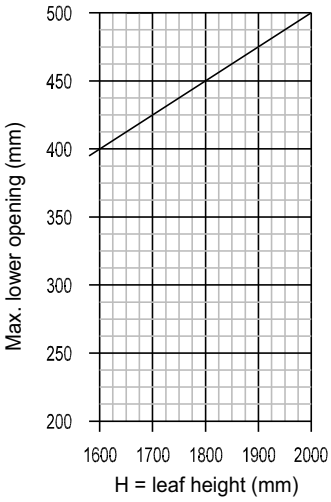


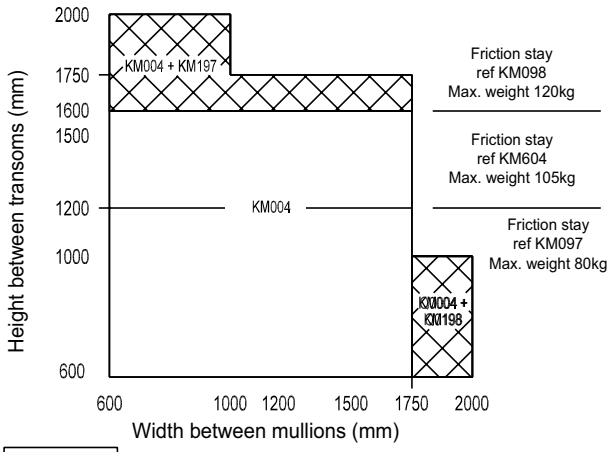
Ref KM098
Large size stainless friction stay
15° maximum lower opening
to security stop











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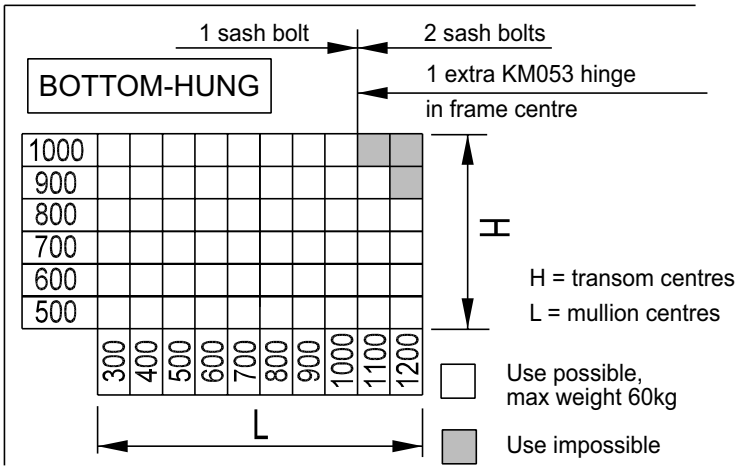


Usage charts

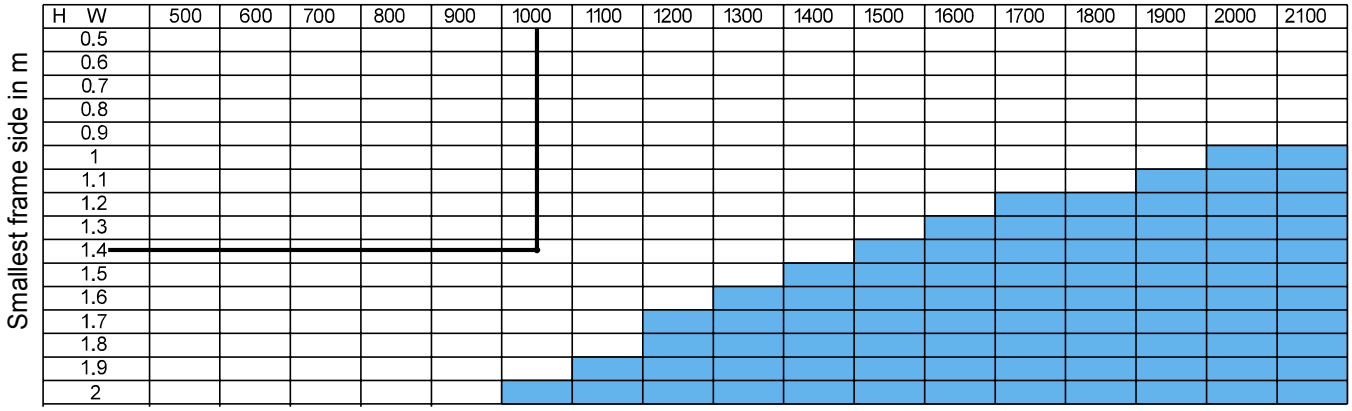
SSG bonding height

Maximum dimensions for SSG use with nominal depression.

This chart shows whether silicone bonding is possible on a frame of dimensions X
with bonding profile FM220 according to its location (NV65).

SSG scale for vertical wall CSTB reference manual 3130, May 1999

W in Pa: normal depression according to NV65 December 1999



Example:

Frame overall h 1.6m l 1.4m
Region 3 following NV65 December 1999 = 750 Pa
Site coefficient Ks = 1.25 (open country)
Large surface area reduction coefficient = 0.85
Coefficient for building height 50m = 1.55
Windbreak effects = NIL
Internal and external local effect coefficients Ci and Ce = 1.05

Formula = 750 x 1.25 x 0.85 x 1.55 x 1.05 = 1300 pressure
1300 x 0.75 = 980 in nominal depression

Conclusion:
bonding on this frame h = 1.600 x l = 1.400
in this location is POSSIBLE

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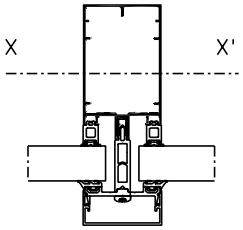
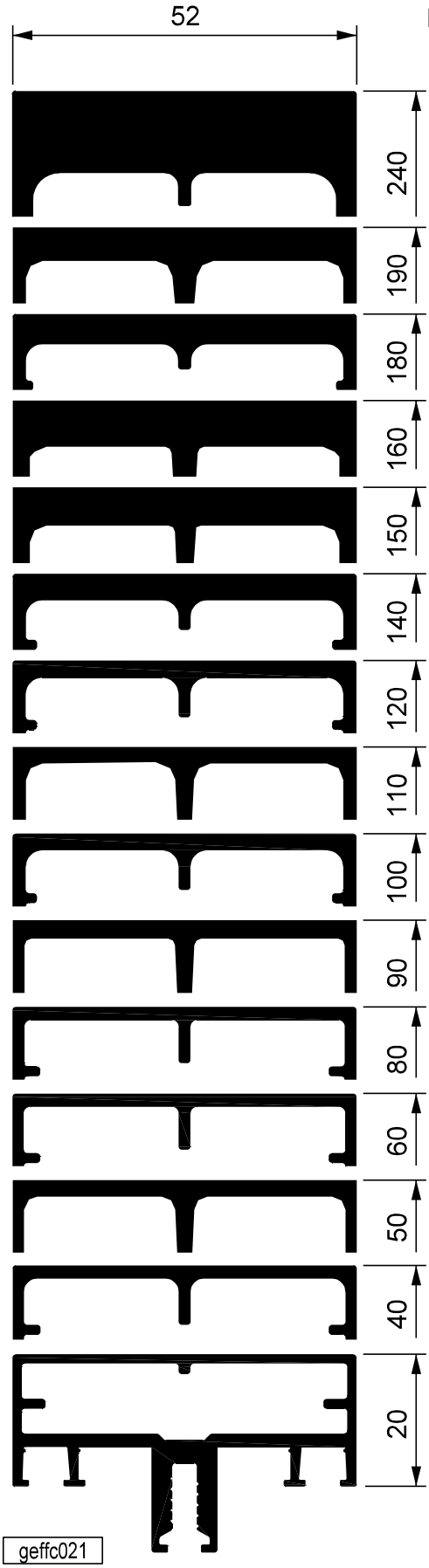
Inertia values

Mullion profiles and grid transoms

For stress loads perpendicular to the façade under wind pressure and depressure
Inertia value along the axis XX'



$I_{XX'}$: in cm^4
$\frac{I_{XX'}}{V}$: in cm^3



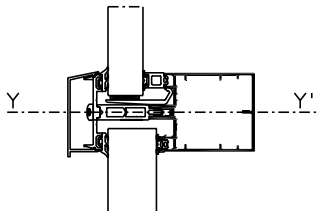
Reference	Perimiter	Profile inertia without reinforcement	Profile inertia with reinforcement	
FM160	0.690 ml	1698.8 cm^4 114.7 cm^3	Welded steel tubes 140x40x4 and 70x40x4	4439.99 cm^4 336.45 cm^3
FM257	0.590 ml	706.12 cm^4 65.58 cm^3	Welded steel tubes 120x40x4 and 40x40x4	2092.57 cm^4 202.19 cm^3
FM159	0.570 ml	589.52 cm^4 58.87 cm^3	Welded steel tubes 120x40x4 and 40x40x4	1974.97 cm^4 197.41 cm^3
FM256	0.530 ml	504.95 cm^4 50.64 cm^3	Steel tube 120x40x4	1065.62 cm^4 117.69 cm^3
FM255	0.510 ml	403.44 cm^4 44.64 cm^3	Steel tube 120x40x4	964.11 cm^4 113.04 cm^3
FM158	0.490 ml	298.30 cm^4 37.56 cm^3	Steel tube 120x40x4	858.97 cm^4 107.75 cm^3
FM157	0.450 ml	181.89 cm^4 27.87 cm^3	Steel tube 100x40x4	528.96 cm^4 77.98 cm^3
FM254	0.430 ml	152.65 cm^4 24.69 cm^3	Steel tube 80x40x4	347.02 cm^4 56.98 cm^3
FM169	0.410 ml	116.05 cm^4 20.95 cm^3	Steel tube 80x40x4	310.42 cm^4 53.70 cm^3
FM253	0.390 ml	93.13 cm^4 17.80 cm^3	Steel tube 60x40x4	186.07 cm^4 36.37 cm^3
FM156	0.370 ml	61.65 cm^4 13.41 cm^3	Steel tube 60x40x4	154.59 cm^4 32.13 cm^3
FM155	0.330 ml	30.99 cm^4 8.84 cm^3	Steel tube 40x40x4	64.20 cm^4 17.12 cm^3
FM252	0.310 ml	22.42 cm^4 6.83 cm^3	Steel tube 20x40x2	26.71 cm^4 8.34 cm^3
FM166	0.290 ml	12.11 cm^4 4.53 cm^3	Steel tube 20x40x2	16.40 cm^4 5.85 cm^3
FM165	0.250 ml	2.24 cm^4 1.28 cm^3		

Inertia values

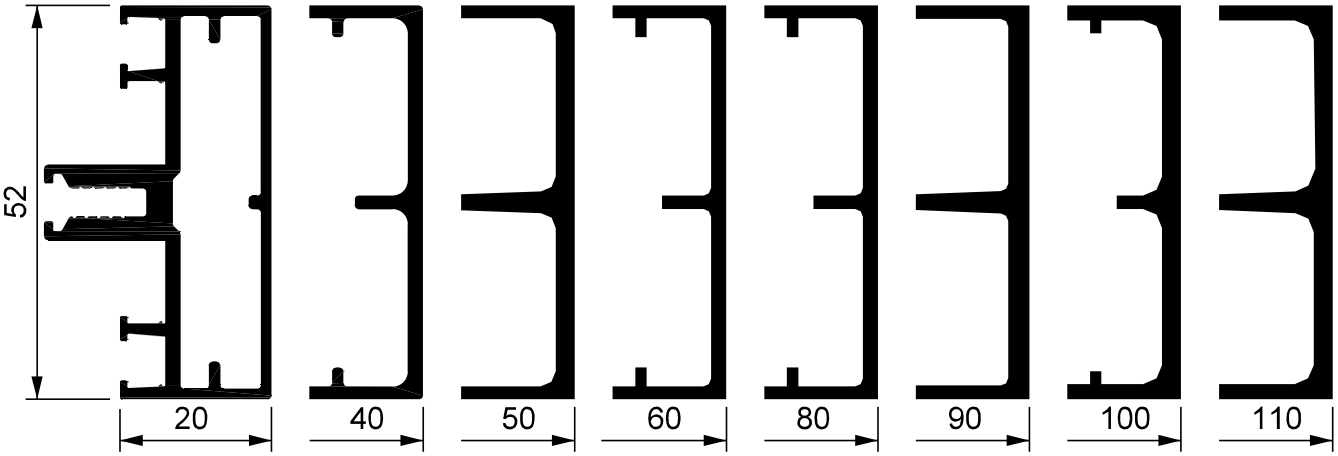
Grid transom profiles

Inertia value for calculating the dead load on transom along the axis YY'

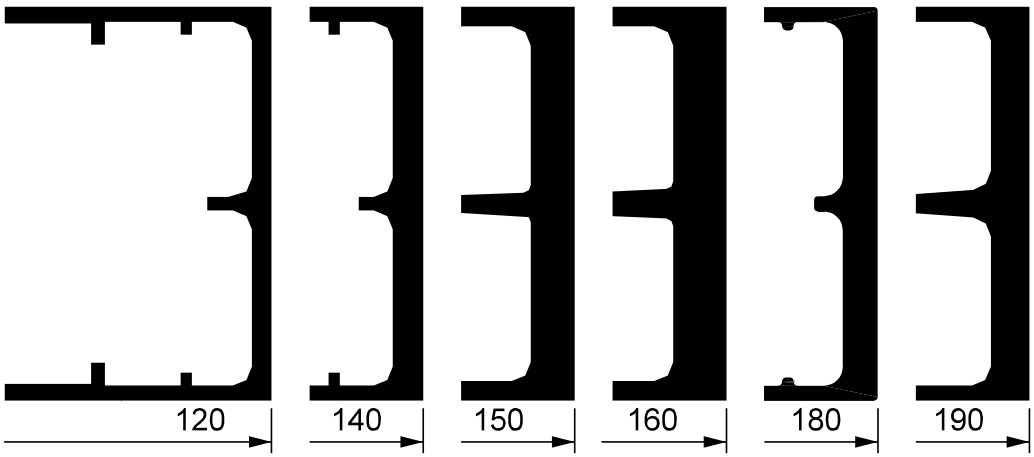
Charts only must be used to determine sizing of grid and glazing load bearing



IYY' : in cm^4
IYY' / V : in cm^3



Reference	FM165	FM166	FM252	FM155	FM156	FM253	FM169	FM254
Inertia without reinforcement	8.52 cm^4 3.27 cm^3	14.24 cm^4 5.48 cm^3	16.87 cm^4 6.49 cm^3	19.09 cm^4 7.34 cm^3	24.17 cm^4 9.29 cm^3	27.20 cm^4 10.46 cm^3	32.82 cm^4 12.62 cm^3	35.73 cm^4 13.74 cm^3
Inertia with reinforcement		Steel tube 20x40x2 27.5 cm^4 10.6 cm^3	Steel tube 20x40x2 30.1 cm^4 11.6 cm^3	Steel tube 40x40x4 52.3 cm^4 20.1 cm^3	Steel tube 60x40x4 73 cm^4 28.1 cm^3	Steel tube 60x40x4 76 cm^4 29.2 cm^3	Steel tube 80x40x4 96.3 cm^4 37.5 cm^3	Steel tube 80x40x4 100.2 cm^4 38.5 cm^3



Reference	FM157	FM158	FM255	FM256	FM159	FM257
Inertia without reinforcement	38.37 cm^4 14.76 cm^3	46.80 cm^4 18 cm^3	52.98 cm^4 19.99 cm^3	56.18 cm^4 21.61 cm^3	63.74 cm^4 24.52 cm^3	66.80 cm^4 25.69 cm^3
Inertia with reinforcement	Steel tube 100x40x4 118.4 cm^4 45.6 cm^3	Steel tube 120x40x4 142.5 cm^4 54.8 cm^3	Steel tube 120x40x4 147.7 cm^4 56.8 cm^3	Steel tube 120x40x4 151.9 cm^4 58.4 cm^3	Steel tube 120x40x4 et 40x40x4 201.1 cm^4 77.4 cm^3	Steel tube 120x40x4 et 40x40x4 204.2 cm^4 78.5 cm^3

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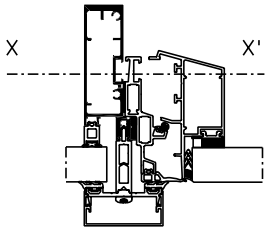
TECHNAL®

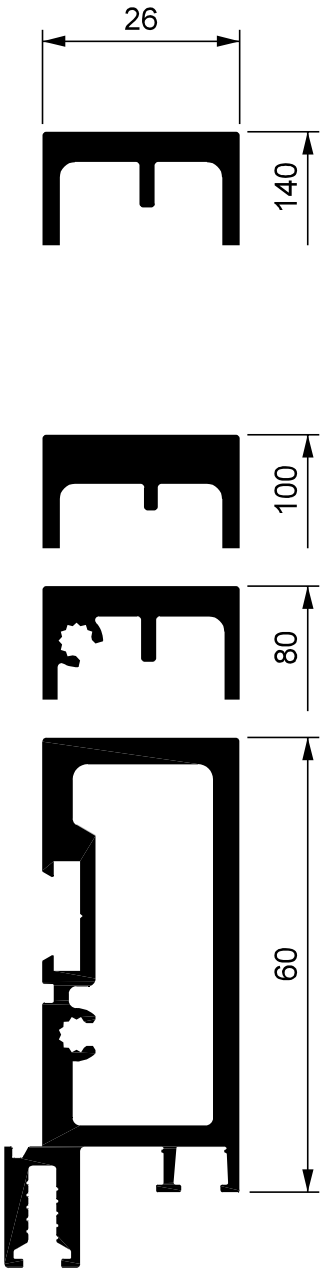
Inertia values

Grid half-mullion and half-transom profiles

Inertia value for calculating the dead load on transom along the axis YY'



$I_{XX'}$: in cm^4
$\frac{I_{XX'}}{V}$: in cm^3



Reference	Perimiter	Profile inertia without reinforcement	Profile inertia with reinforcement	
FM263	0.441 ml	224.04 cm^4 29.49 cm^3	Steel plate 120 x 12	742.4 cm^4
FM264	0.361 ml	107.29 cm^4 17.86 cm^3	Steel plate 80 x 12	260.89 cm^4
FM262	0.324 ml	55.46 cm^4 11.63 cm^3	Steel plate 60 x 12	120.26 cm^4
FM261	0.283 ml	29.21 cm^4 7.83 cm^3		

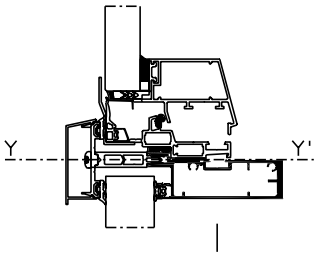
geffc023

Inertia values

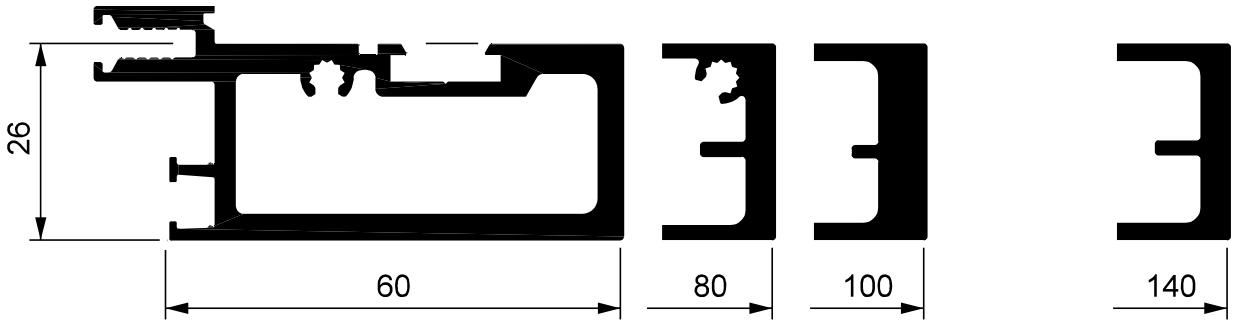
Grid half-transom profiles

Inertia value for calculating the dead load on transom along the axis YY'

Charts only must be used to determine sizing of grid and glazing load bearing



$I_{YY'}$: in cm^4
$\frac{I_{YY'}}{V}$: in cm^3



Reference	FM261	FM262	FM264	FM263
Inertia without reinforcement	6.71 cm^4 4.10 cm^3	6.79 cm^4 4.32 cm^3	8.77 cm^4 5.40 cm^3	11.20 cm^4 6.79 cm^3

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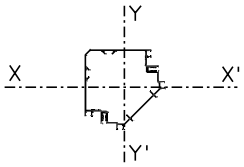
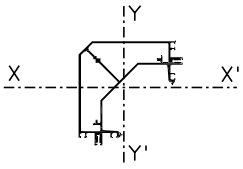
TECHNAL®

Inertia values

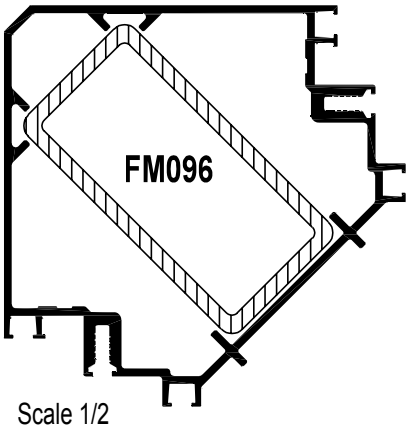
Corner posts



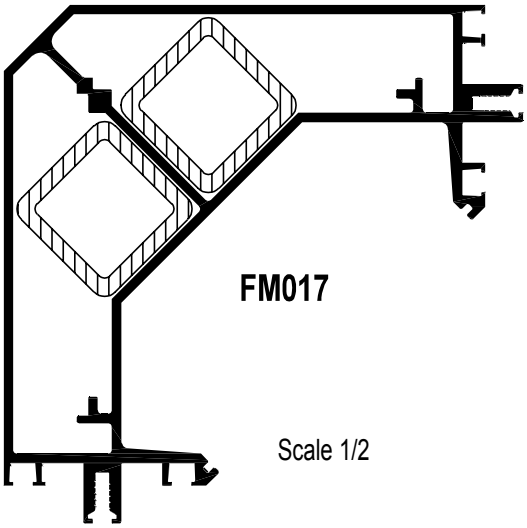


$IXX' : \text{in } cm^4$ $\quad \frac{IXX'}{V} : \text{in } cm^3$ $\quad IYY' : \text{in } cm^4$ $\quad \frac{IYY'}{V} : \text{in } cm^3$

Reference	Perimiter	Profile inertia without reinforcement	Profile inertia with reinforcement
FM096	0.553 ml	$IXX' = 129.18\ cm^4$ $\frac{IXX'}{V} = 22.19\ cm^3$ $IYY' = 129.18\ cm^4$ $\frac{IYY'}{V} = 22.19\ cm^3$	Steel tube 80x40x4 $IXX' = 267.27\ cm^4$ $\frac{IXX'}{V} = 56.06\ cm^3$ $IYY' = 267.27\ cm^4$ $\frac{IYY'}{V} = 56.06\ cm^3$
FM017	0.760 ml	$IXX' = 339.54\ cm^4$ $\frac{IXX'}{V} = 40.83\ cm^3$ $IYY' = 339.54\ cm^4$ $\frac{IYY'}{V} = 40.83\ cm^3$	Steel tube 35x35x4 $IXX' = 386.07\ cm^4$ $\frac{IXX'}{V} = 60.98\ cm^3$ $IYY' = 386.07\ cm^4$ $\frac{IYY'}{V} = 60.98\ cm^3$

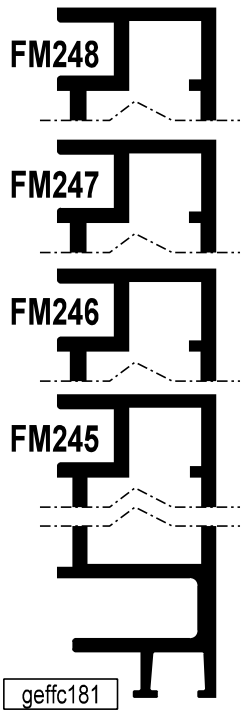


Scale 1/2



Scale 1/2

Expansion mullions inertia



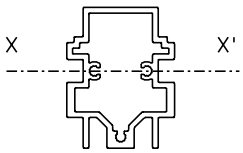
geffc181

Reference	Perimiter	Profile inertia without reinforcement
FM248	0.396 ml	$IXX' = 135.80\ cm^4$ $IYY' = 4.80\ cm^4$ $\frac{IXX'}{V} = 19.10\ cm^3$ $\frac{IYY'}{V} = 4.20\ cm^3$
FM247	0.315 ml	$IXX' = 51.37\ cm^4$ $IYY' = 3.20\ cm^4$ $\frac{IXX'}{V} = 10.04\ cm^3$ $\frac{IYY'}{V} = 2.77\ cm^3$
FM246	0.277 ml	$IXX' = 27.15\ cm^4$ $IYY' = 2.43\ cm^4$ $\frac{IXX'}{V} = 6.58\ cm^3$ $\frac{IYY'}{V} = 2.06\ cm^3$
FM245	0.229 ml	$IXX' = 12.03\ cm^4$ $IYY' = 1.77\ cm^4$ $\frac{IXX'}{V} = 3.83\ cm^3$ $\frac{IYY'}{V} = 1.47\ cm^3$

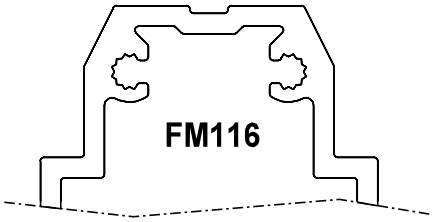
Inertia values

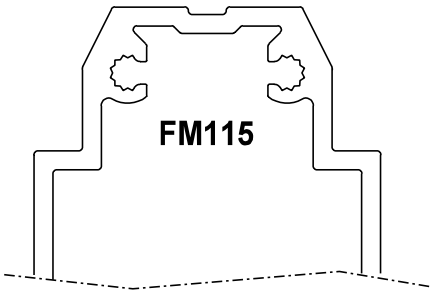
Sleeve sections

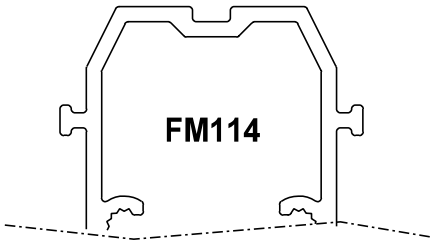
Inertia value for calculating the dead load on transom along the axis XX'

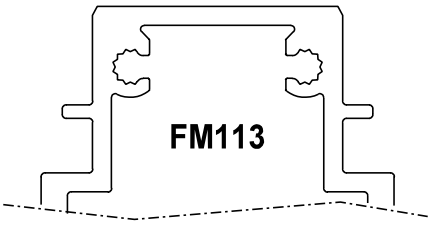


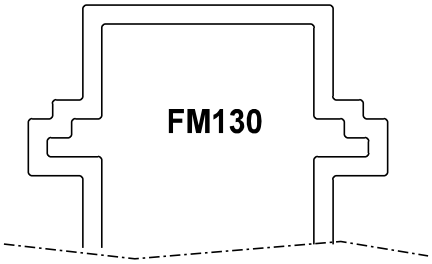
$I_{XX'}$: in cm^4
$\frac{I_{XX'}}{V}$: in cm^3
$I_{YY'}$: in cm^4
$\frac{I_{YY'}}{V}$: in cm^3



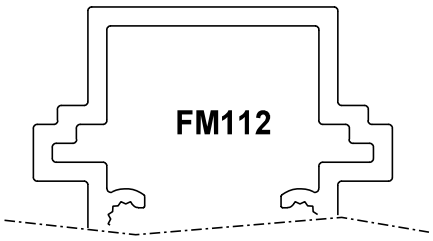


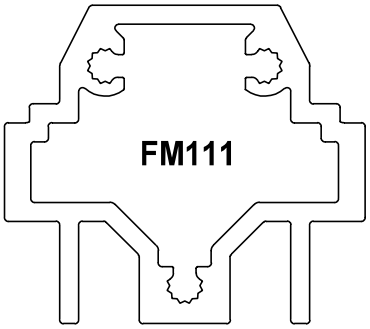






Reference	Inertia	
FM111	$I_{XX'}$ = 9.41 cm^4 $\frac{I_{XX'}}{V}$ = 4.50 cm^3	$I_{YY'}$ = 11.18 cm^4 $\frac{I_{YY'}}{V}$ = 4.70 cm^3
FM112	$I_{XX'}$ = 26.42 cm^4 $\frac{I_{XX'}}{V}$ = 8.14 cm^3	$I_{YY'}$ = 17.61 cm^4 $\frac{I_{YY'}}{V}$ = 7.43 cm^3
FM130	$I_{XX'}$ = 54.88 cm^4 $\frac{I_{XX'}}{V}$ = 12.77 cm^3	$I_{YY'}$ = 18.33 cm^4 $\frac{I_{YY'}}{V}$ = 7.74 cm^3
FM113	$I_{XX'}$ = 114.63 cm^4 $\frac{I_{XX'}}{V}$ = 22.01 cm^3	$I_{YY'}$ = 25.80 cm^4 $\frac{I_{YY'}}{V}$ = 11.07 cm^3
FM114	$I_{XX'}$ = 137.76 cm^4 $\frac{I_{XX'}}{V}$ = 20.79 cm^3	$I_{YY'}$ = 19.05 cm^4 $\frac{I_{YY'}}{V}$ = 8.37 cm^3
FM115	$I_{XX'}$ = 372.05 cm^4 $\frac{I_{XX'}}{V}$ = 44.27 cm^3	$I_{YY'}$ = 31.75 cm^4 $\frac{I_{YY'}}{V}$ = 13.88 cm^3
FM116	$I_{XX'}$ = 808.84 cm^4 $\frac{I_{XX'}}{V}$ = 74.70 cm^3	$I_{YY'}$ = 42.93 cm^4 $\frac{I_{YY'}}{V}$ = 19.29 cm^3



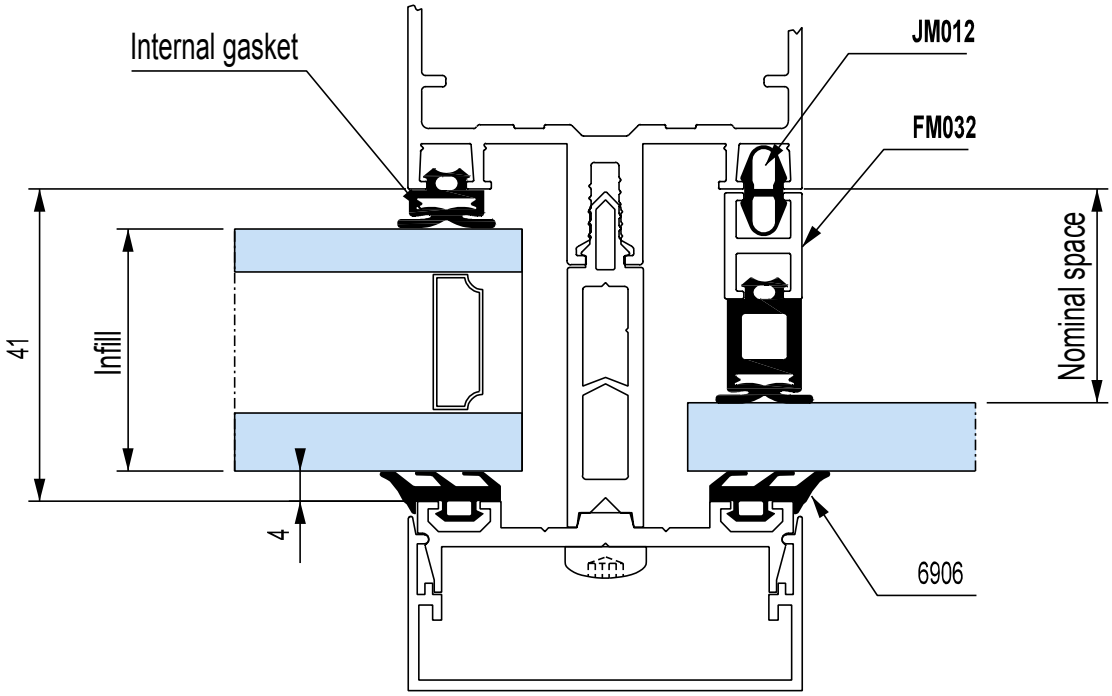


geffc182

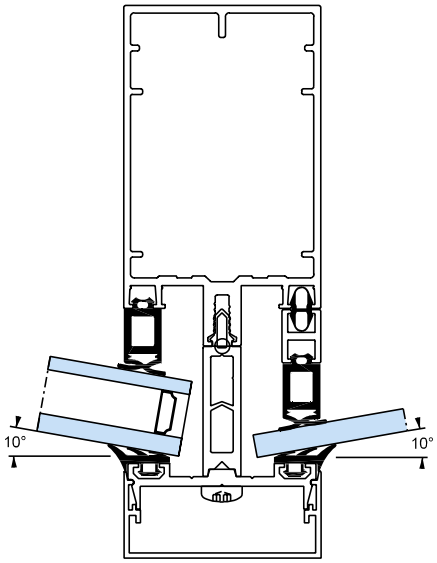
TECHNAL®

Infills

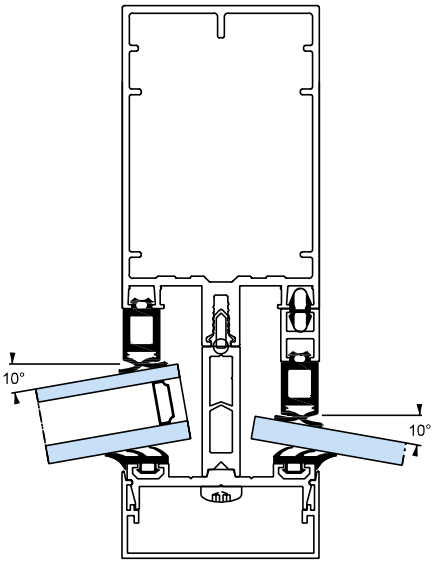
Grid effect . 0 ± 10° maxi



Convex angle
from 0° min to 10° max



Concave angle
from 0° min to 10° max



geffc025

Infill mm	Nominal space mm	Bead reference	Internal gasket reference	External gasket reference
6	14 + 17	FM032	JM008	6906
8	14 + 15	FM032	JM006	6906
9 (44.2)	14 + 14	FM032	JM009	6906
10	14 + 13	FM032	JM007	6906
11 (55.2)	14 + 12	FM032	JM081	6906
12	14 + 11	FM032	JM004	6906
14	14 + 9	FM032	JM001	6906
17	14 + 6	FM032	JM010	6906
18	14 + 5	FM032	JM132	6906
20	17	Without	JM008	6906
22	15	Without	JM006	6906
23	14	Without	JM009	6906
24	13	Without	JM007	6906
25	12	Without	JM081	6906
26	11	Without	JM004	6906
28	9	Without	JM001	6906
31	6	Without	JM010	6906
32	5	Without	JM132	6906

JM132 5 mm

JM010 6 mm

JM001 9 mm

JM004 11 mm

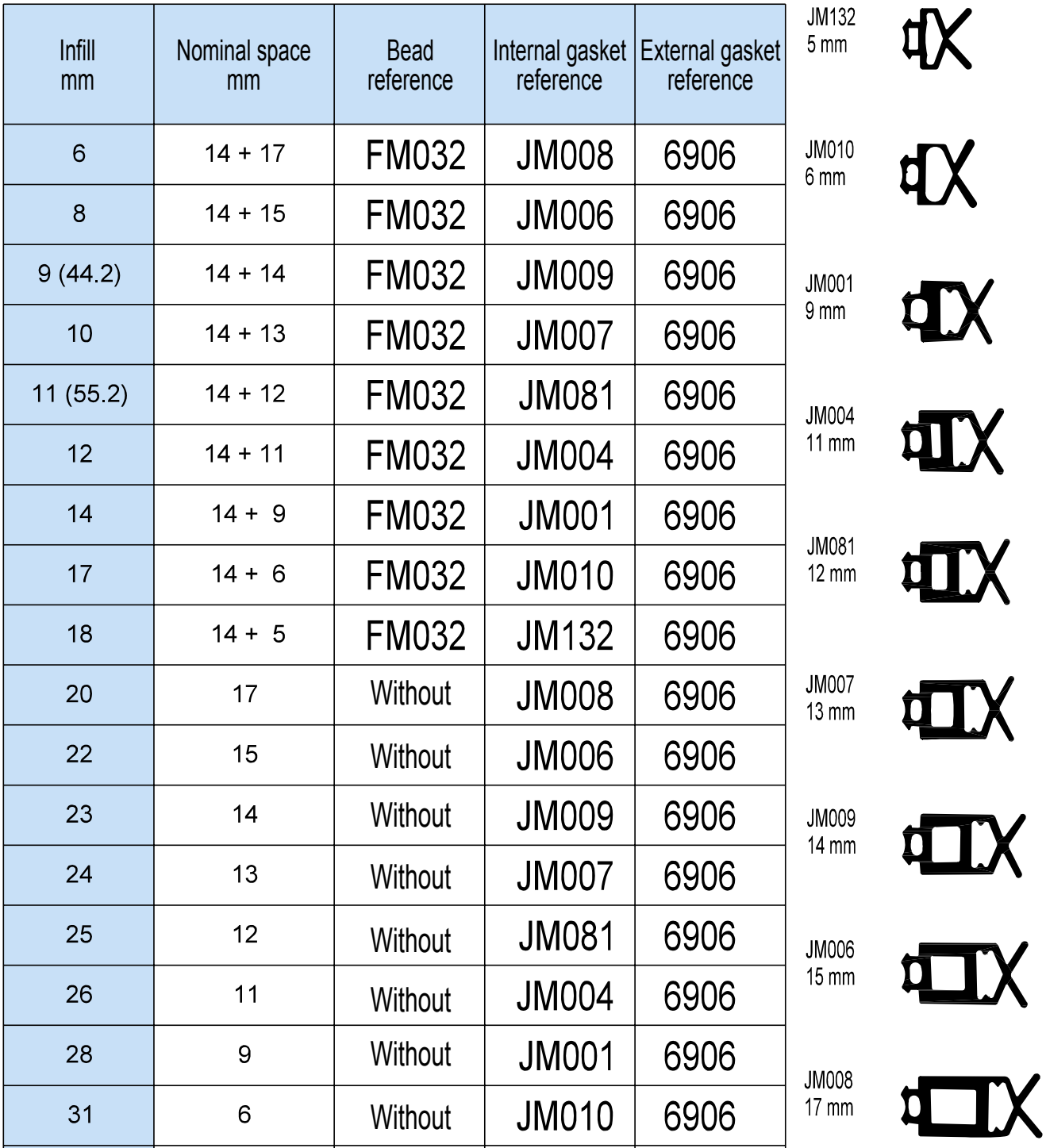
JM081 12 mm

JM007 13 mm

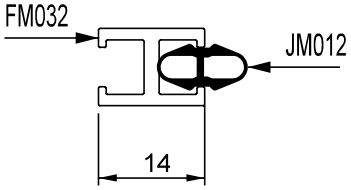
JM009 14 mm

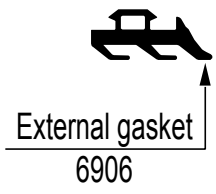
JM006 15 mm

JM008 17 mm



OM042 Gasket roller may be used for installation



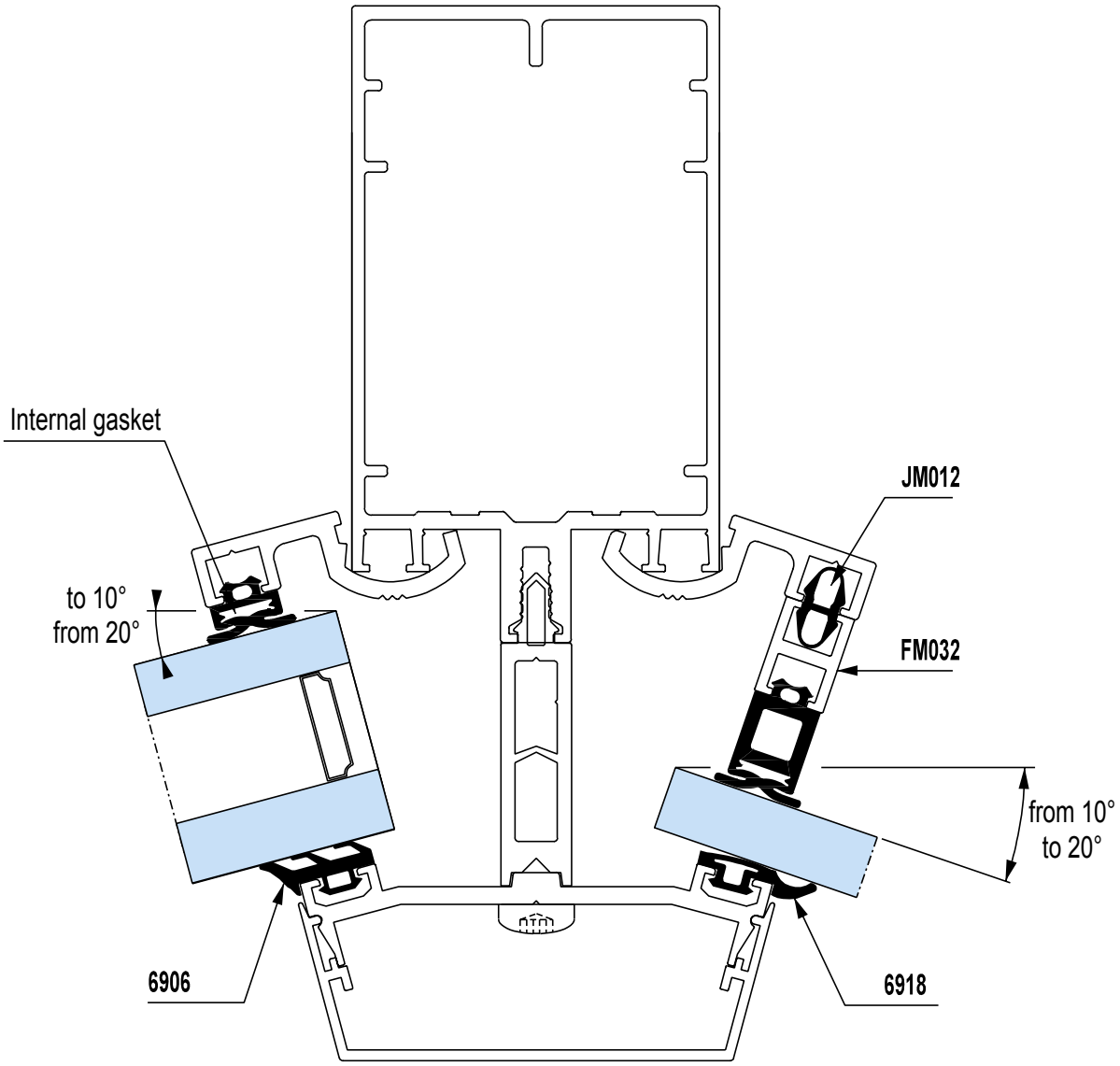


geffc026

TECHNAL®

Infills

Grid effect concave angle from 10° min to 20° max



Scale 1:1

geffc027

Infill mm	Nominal space mm	Bead reference	Internal gasket reference	External gasket reference	
				angle from 10° to 15°	angle from 16° to 20°
6	14 + 17	FM032	JM008	6906	6918
8	14 + 15	FM032	JM006	6906	6918
9 (44.2)	14 + 14	FM032	JM009	6906	6918
10	14 + 13	FM032	JM007	6906	6918
11 (55.2)	14 + 12	FM032	JM081	6906	6918
12	14 + 11	FM032	JM004	6906	6918
14	14 + 9	FM032	JM001	6906	6918
17	14 + 6	FM032	JM010	6906	6918
18	14 + 5	FM032	JM132	6906	6918
20	17	Without	JM008	6906	6918
22	15	Without	JM006	6906	6918
23	14	Without	JM009	6906	6918
24	13	Without	JM007	6906	6918
25	12	Without	JM081	6906	6918
26	11	Without	JM004	6906	6918
28	9	Without	JM001	6906	6918
31	6	Without	JM010	6906	6918
32	5	Without	JM132	6906	6918

JM132 5 mm

JM010 6 mm

JM001 9 mm

JM004 11 mm

JM081 12 mm

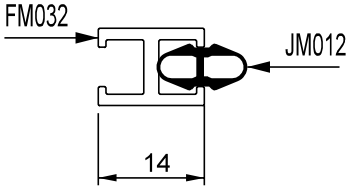
JM007 13 mm

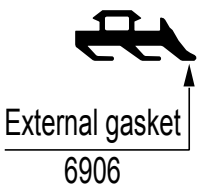
JM009 14 mm

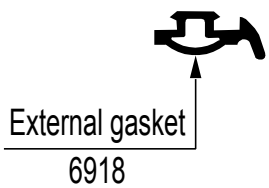
JM006 15 mm

JM008 17 mm

OM042 Gasket roller may be used for installation





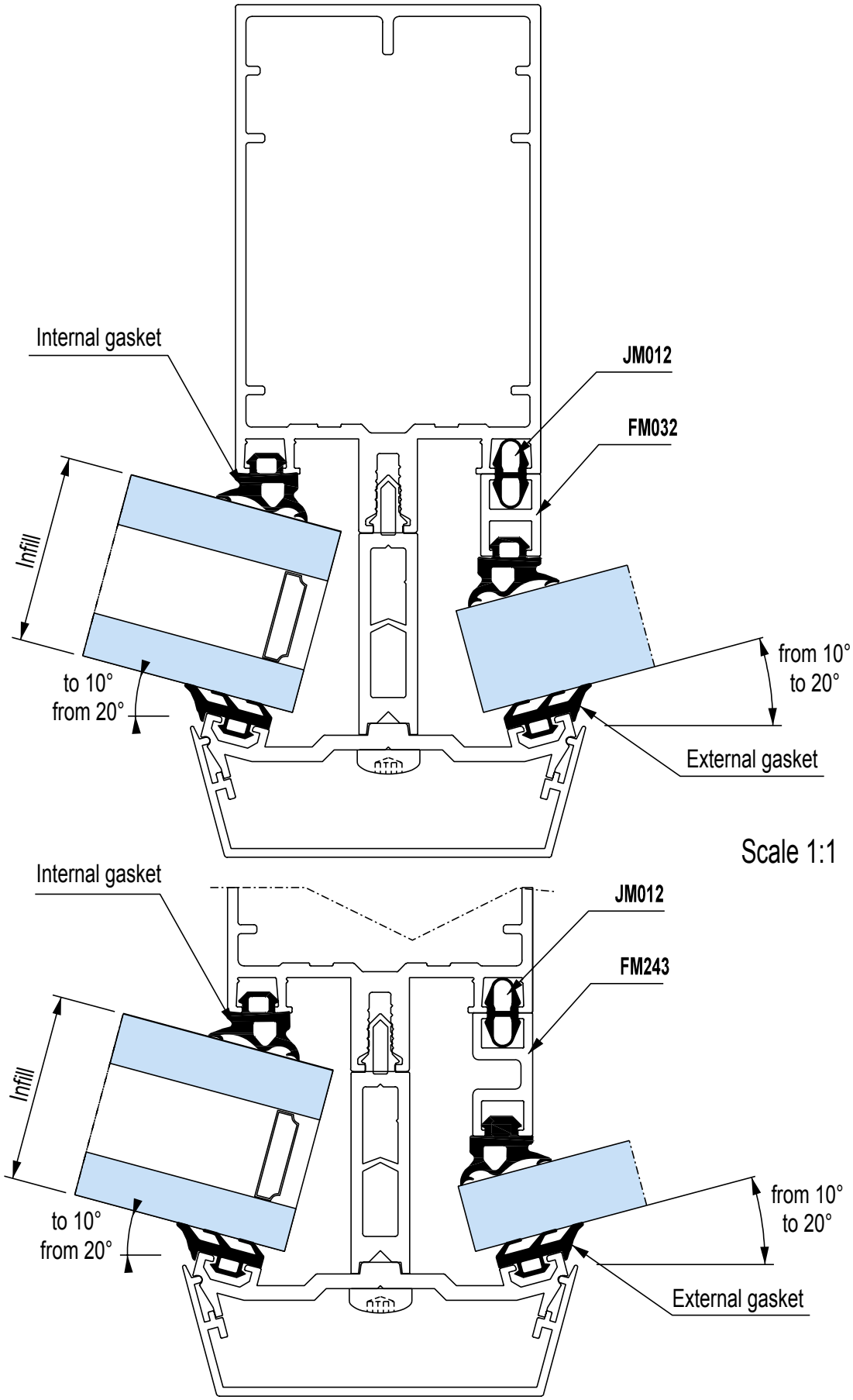


geffc028

TECHNAL®

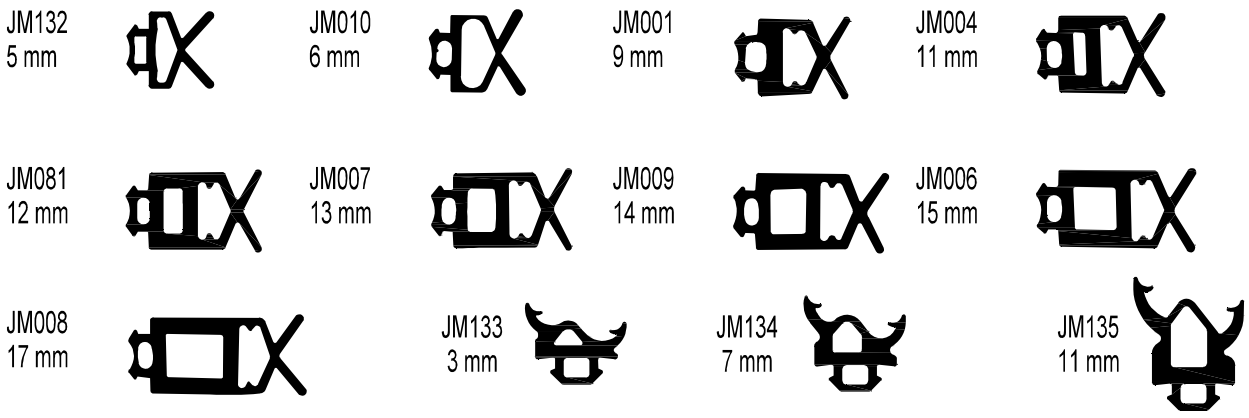
Infills

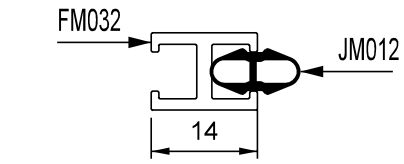
Grid effect convex angle from 10° min to 20° max



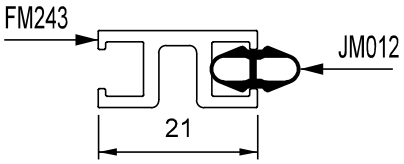
geffc029

Infill mm	Bead reference	Internal gasket reference	External gasket reference	Bead reference	Internal gasket reference	External gasket reference
	For transoms			For mullions		
8	FM032	JM006	6906	FM243	JM135	6906
9 (44.2)	FM032	JM009	6906	FM243	JM135	6906
12	FM032	JM004	6906	FM243	JM134	6906
14	FM032	JM001	6906	FM032	JM135	6906
18	FM032	JM132	6906	FM032	JM134	6906
20	Without	JM008	6906	FM032	JM133	6906
28	Without	JM001	6906	Without	JM135	6906
31	Without	JM010	6906	Without	JM134	6906
32	Without	JM132	6906	Without	JM134	6906





External gasket
6906

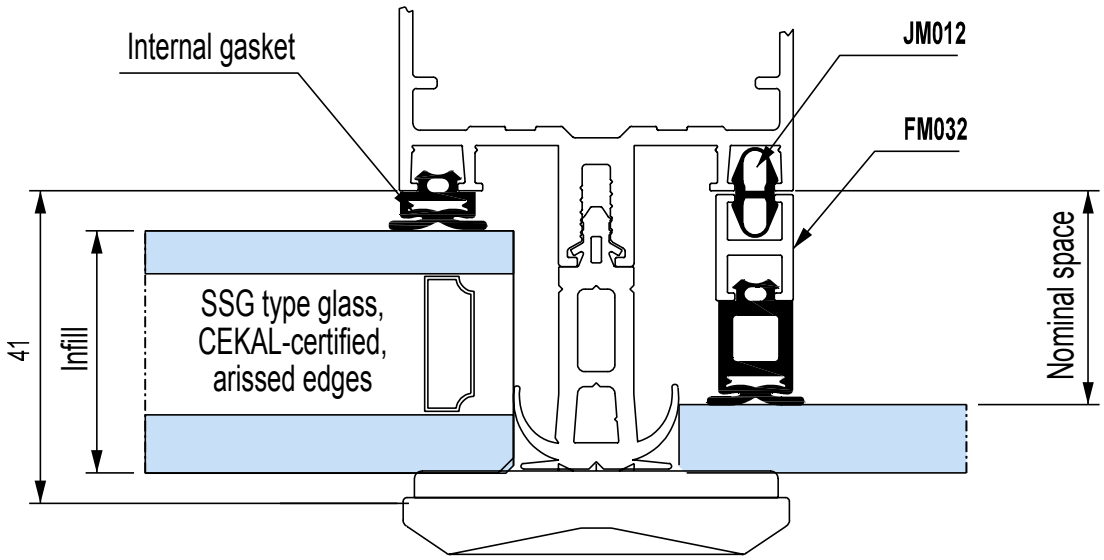


geffc030

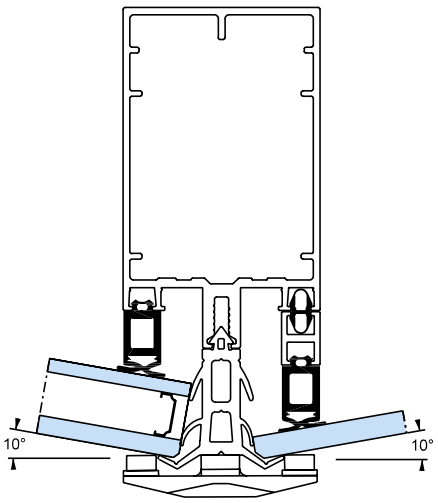
TECHNAL®

Infills

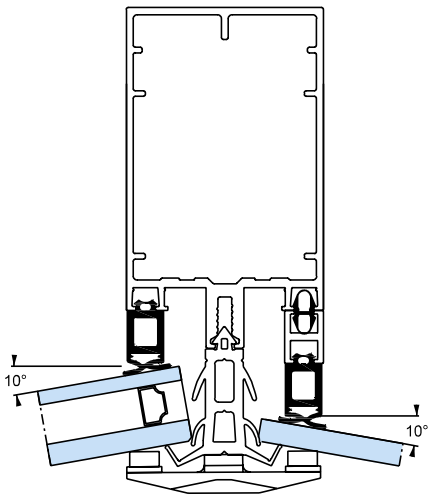
Horizontal effect 0 to ± 10° max.



Convex angle
from 0 to ± 10° max



Concave angle
from 0 to ± 10° max



geffc031

Infill mm	Nominal space mm	Bead reference	Internal gasket reference
6	14 + 17	FM032	JM008
8	14 + 15	FM032	JM006
9 (44.2)	14 + 14	FM032	JM009
10	14 + 13	FM032	JM007
11 (55.2)	14 + 12	FM032	JM081
12	14 + 11	FM032	JM004
14	14 + 9	FM032	JM001
17	14 + 6	FM032	JM010
18	14 + 5	FM032	JM132
20	17	Without	JM008
22	15	Without	JM006
23	14	Without	JM009
24	13	Without	JM007
25	12	Without	JM081
26	11	Without	JM004
28	9	Without	JM001
31	6	Without	JM010
32	5	Without	JM132

JM132
5 mm

JM010
6 mm

JM001
9 mm

JM004
11 mm

JM081
12 mm

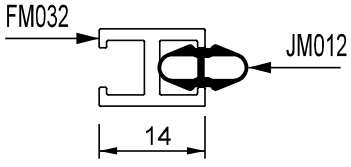
JM007
13 mm

JM009
14 mm

JM006
15 mm

JM008
17 mm

OM042 Gasket roller may be used for installation

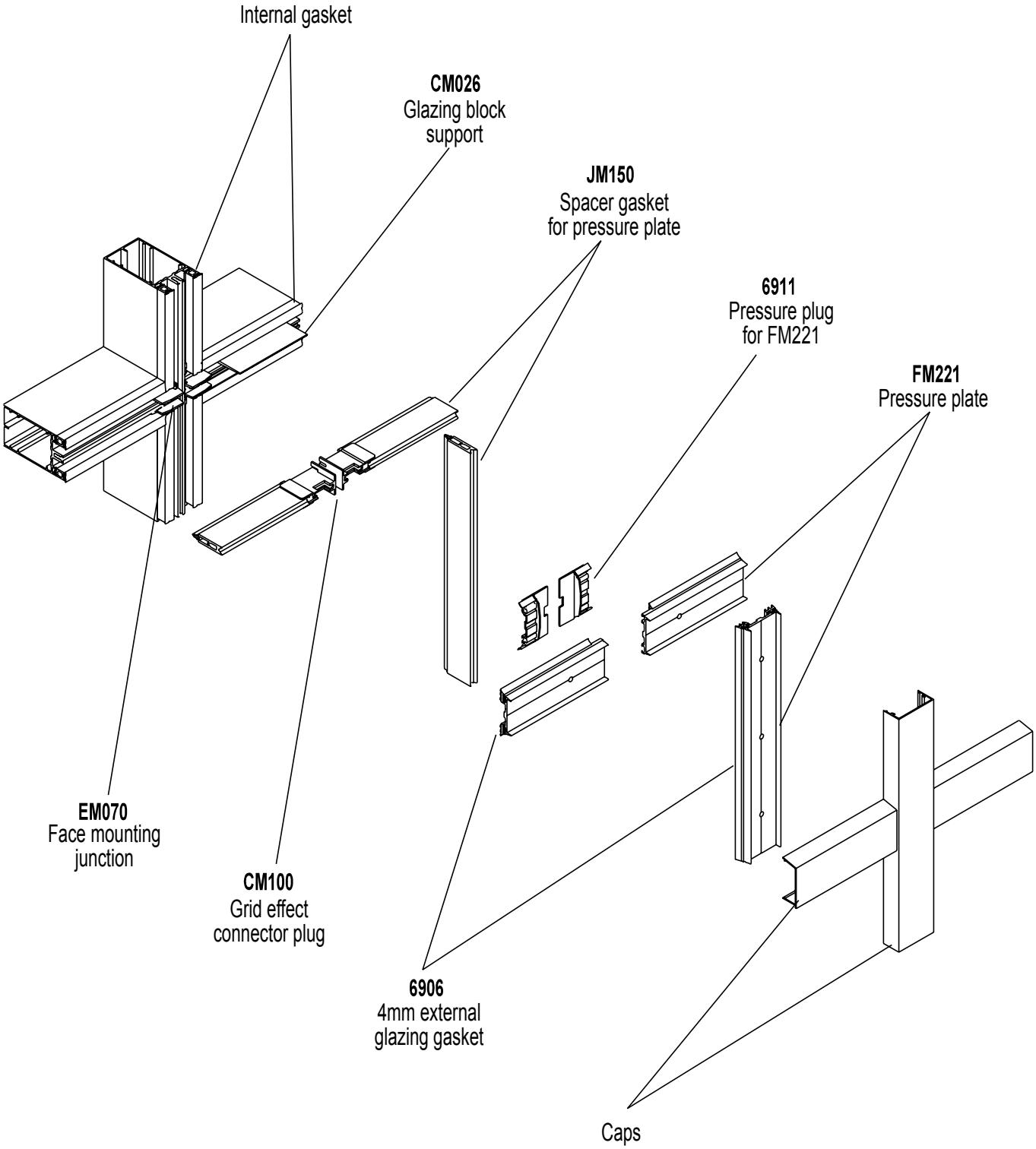


geffc032

TECHNAL®

Construction overview

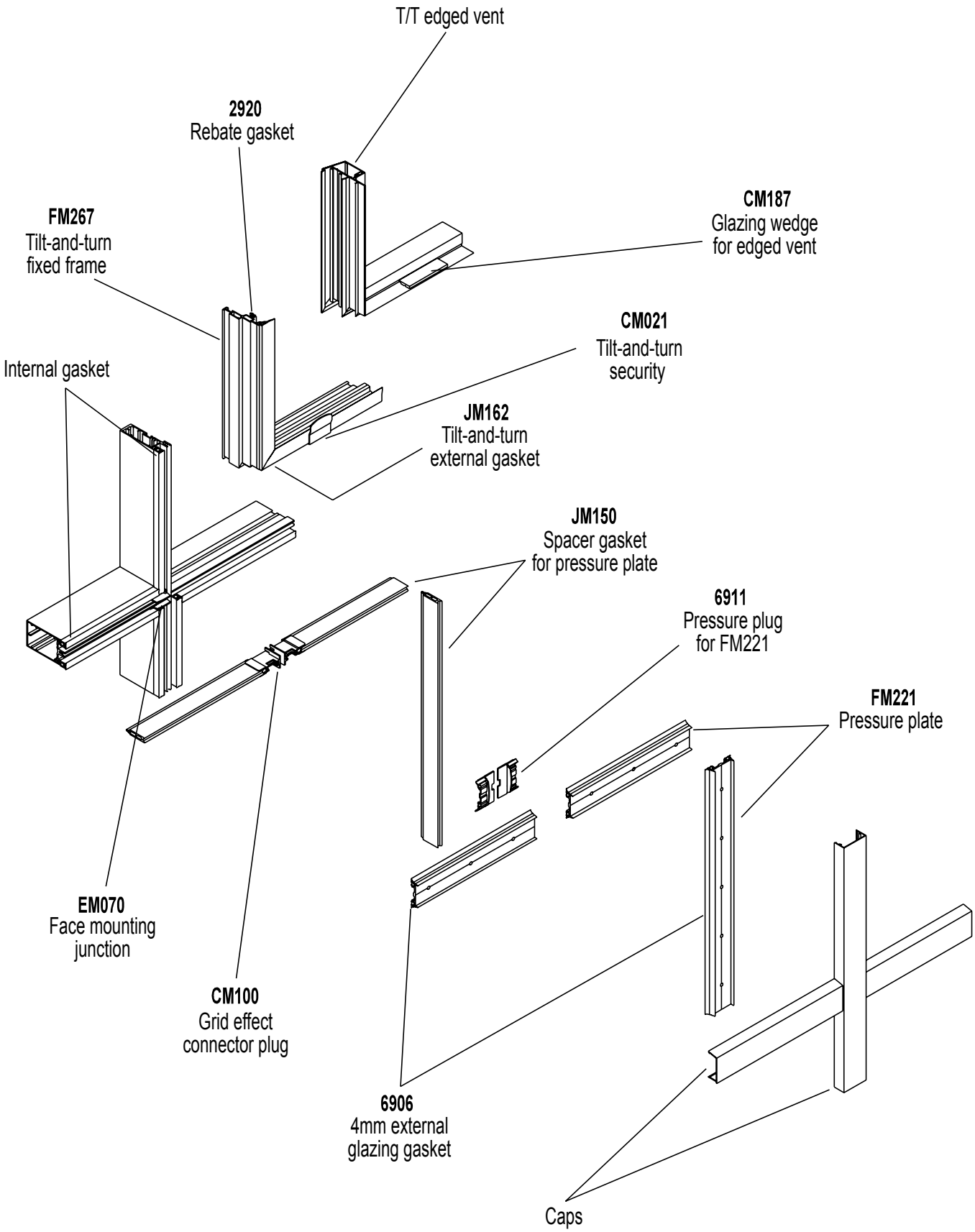
Fixed frame grid effect



geffc033

Construction overview

Tilt-and-turn grid effect

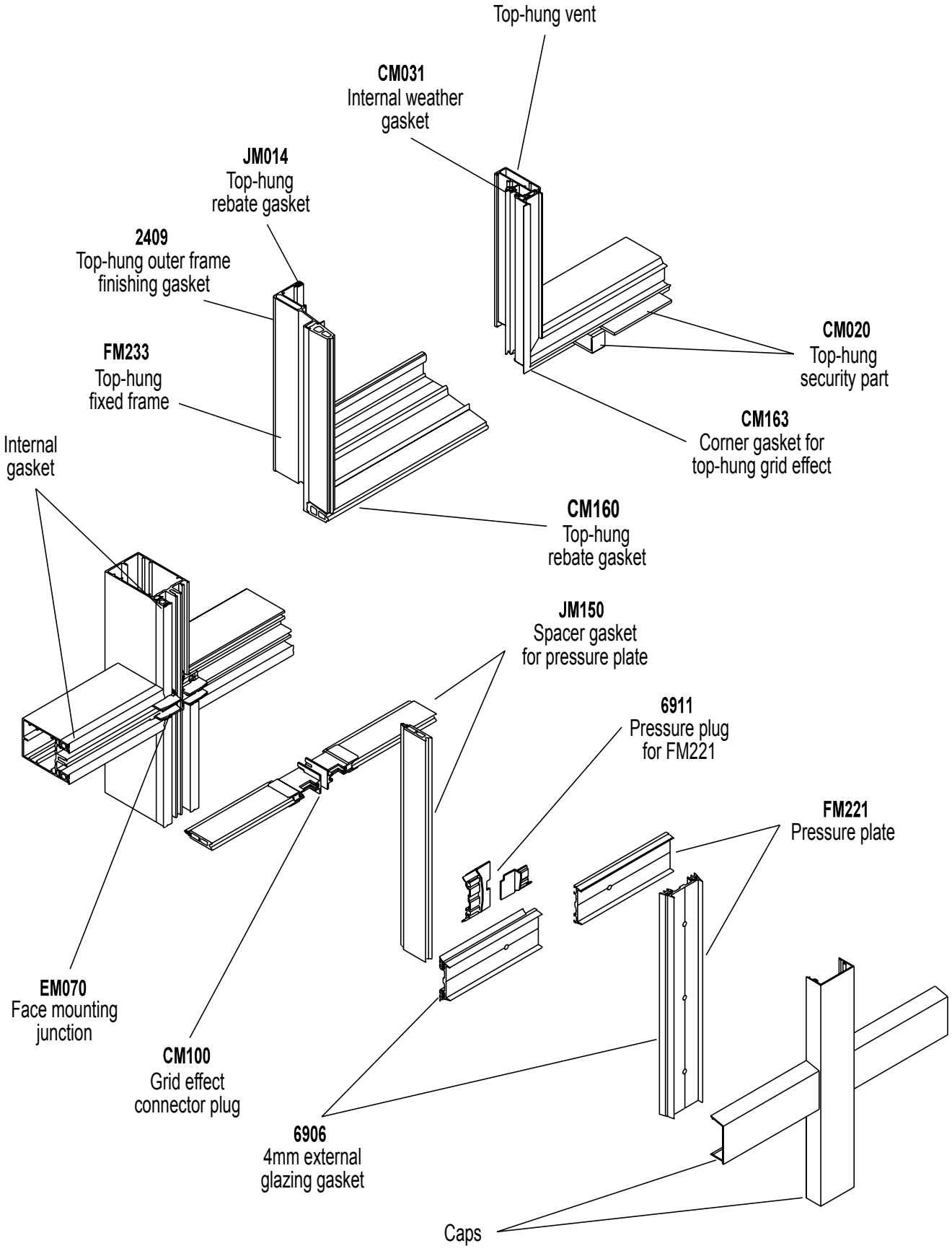


geffc038

TECHNAL®

Construction overview

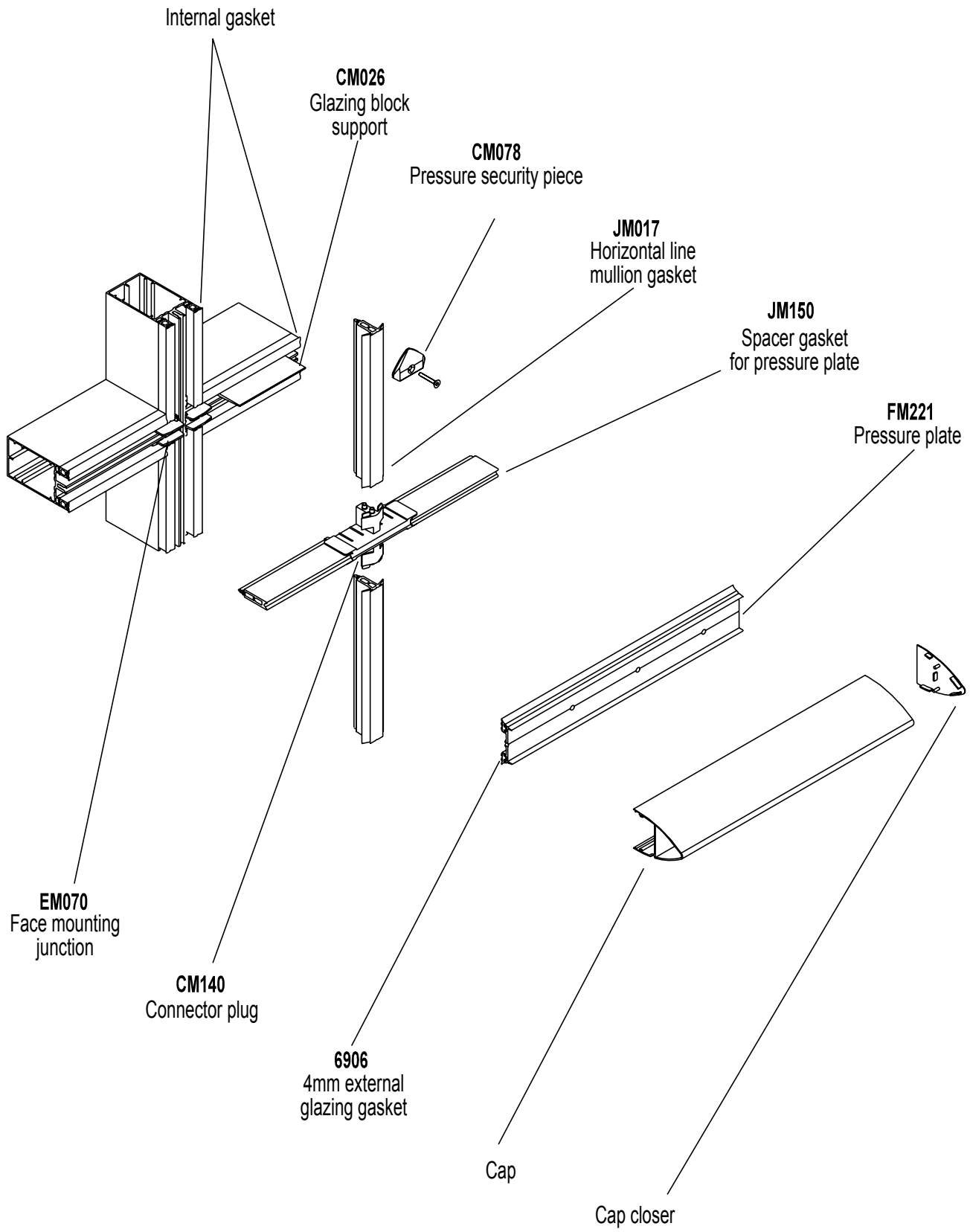
Top-hung grid effect



geffc035

Construction overview

Horizontal line effect fixed frame

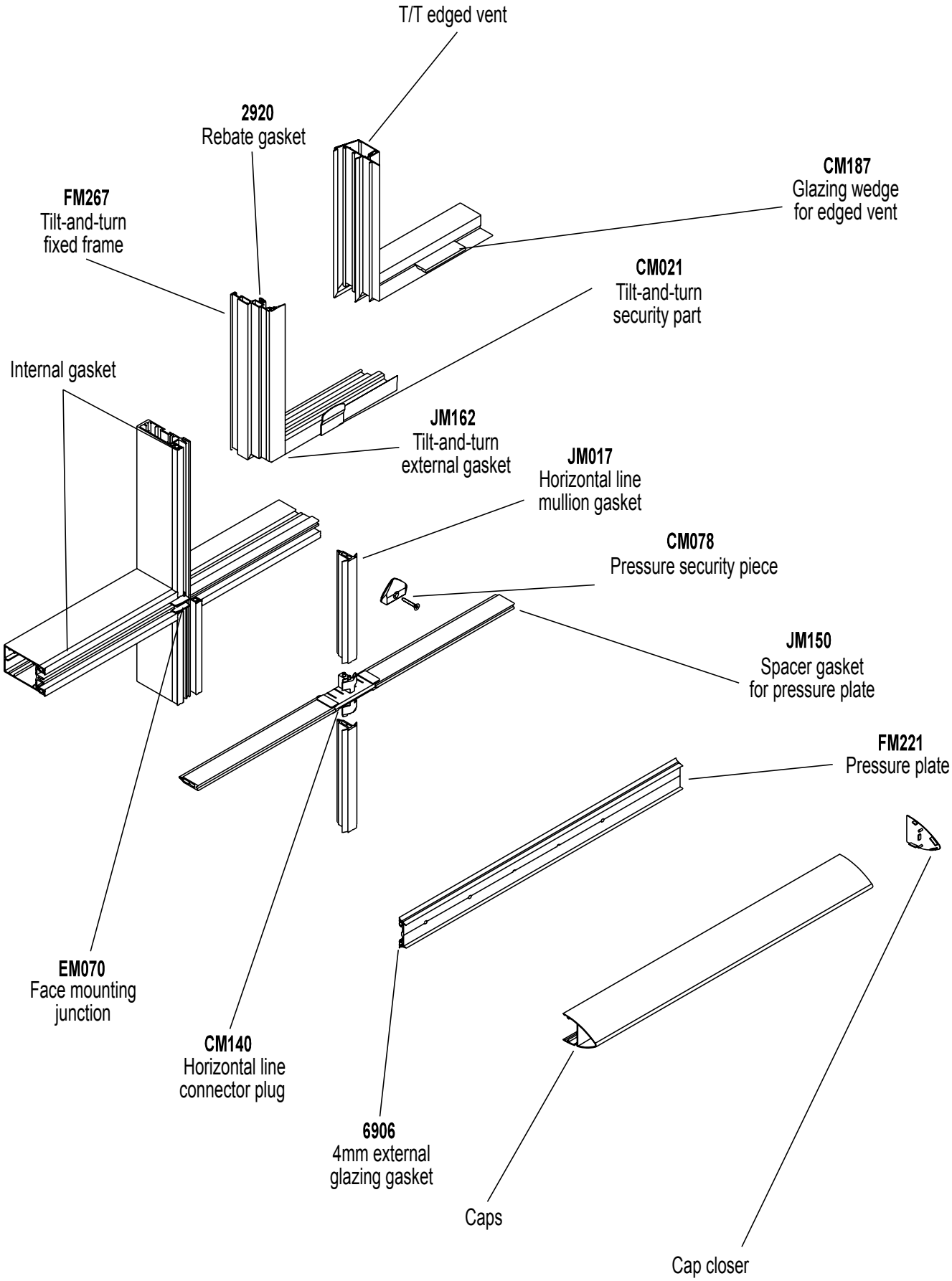


geffc034

TECHNAL®

Construction overview

Horizontal line effect tilt-and-turn

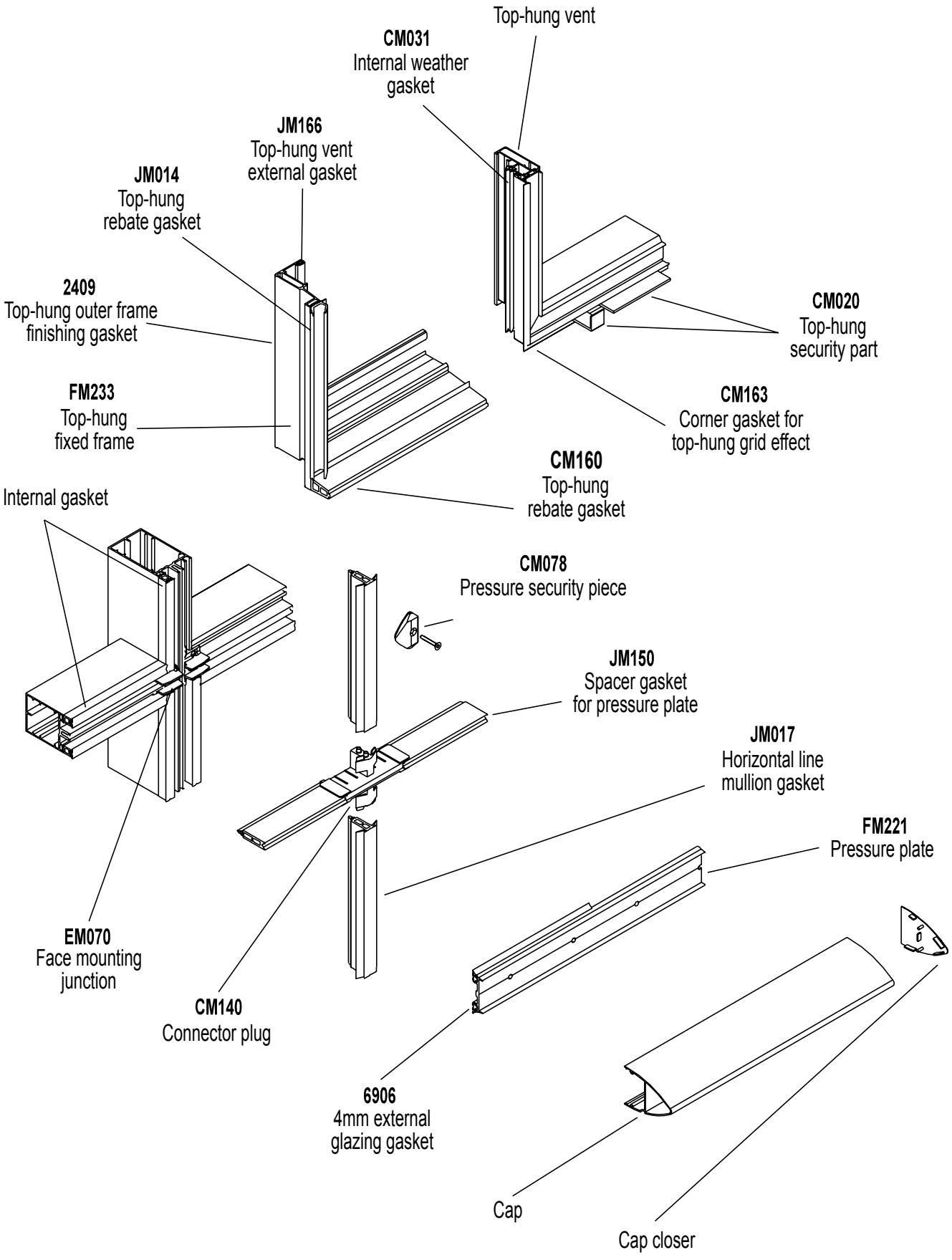


Nota: Gasket has to be bonded on bottom transom of fixed frame

geffc039

Construction overview

Horizontal line effect top-hung

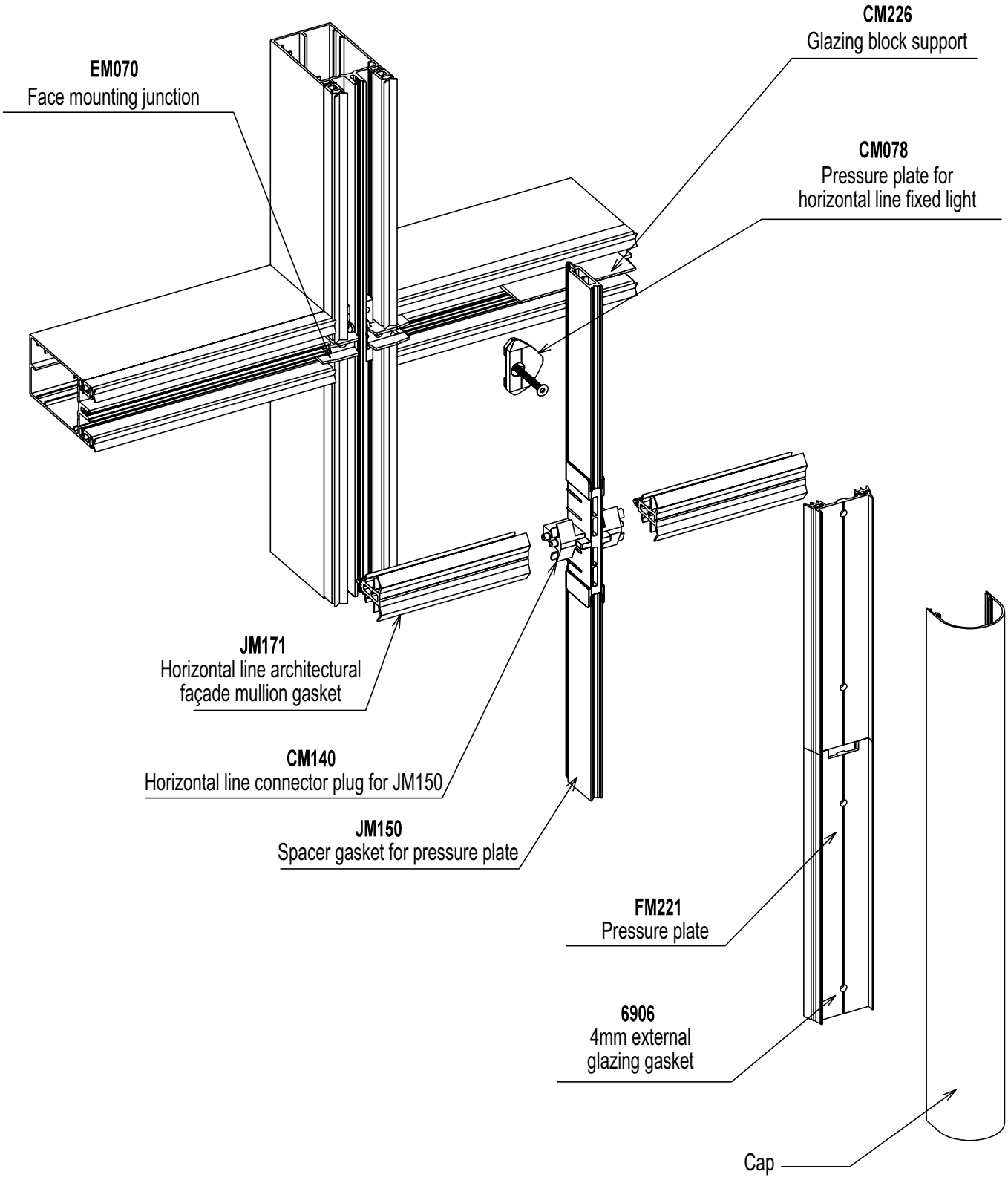


geffc037

TECHNAL®

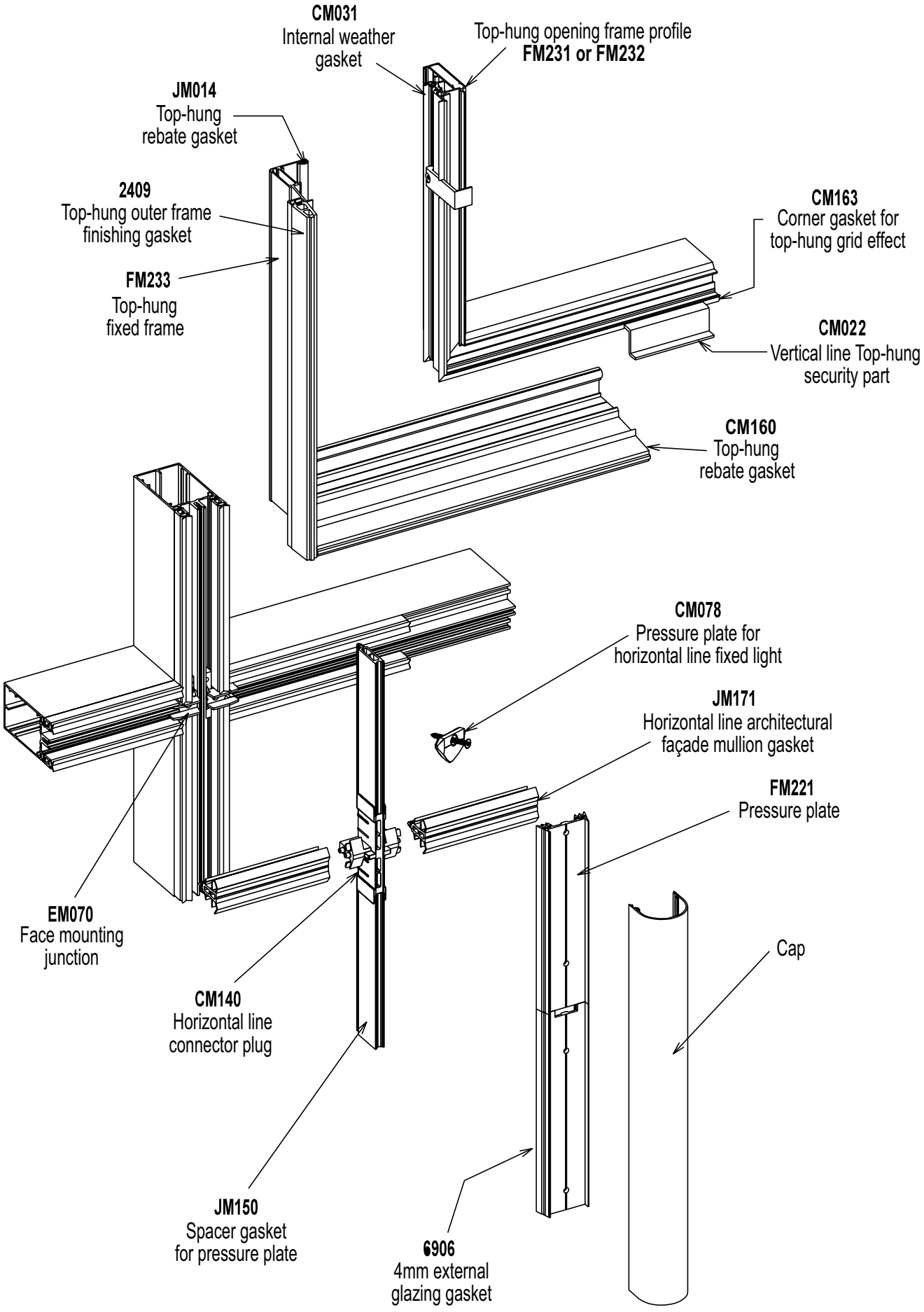
Construction overview

Vertical line effect fixed frame



Construction overview

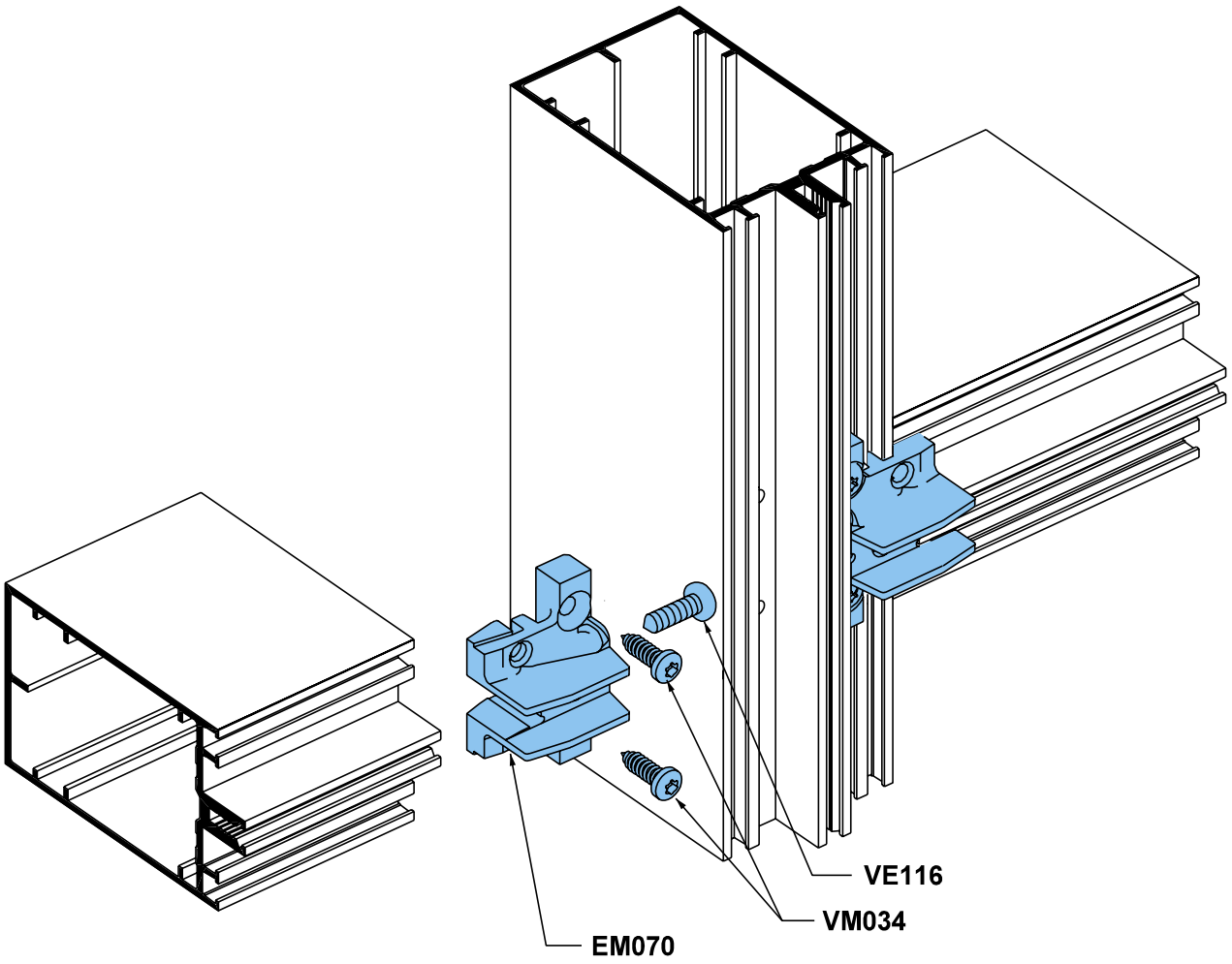
Vertical line effect top-hung



TECHNAL®

Assembly methods

Face mounting

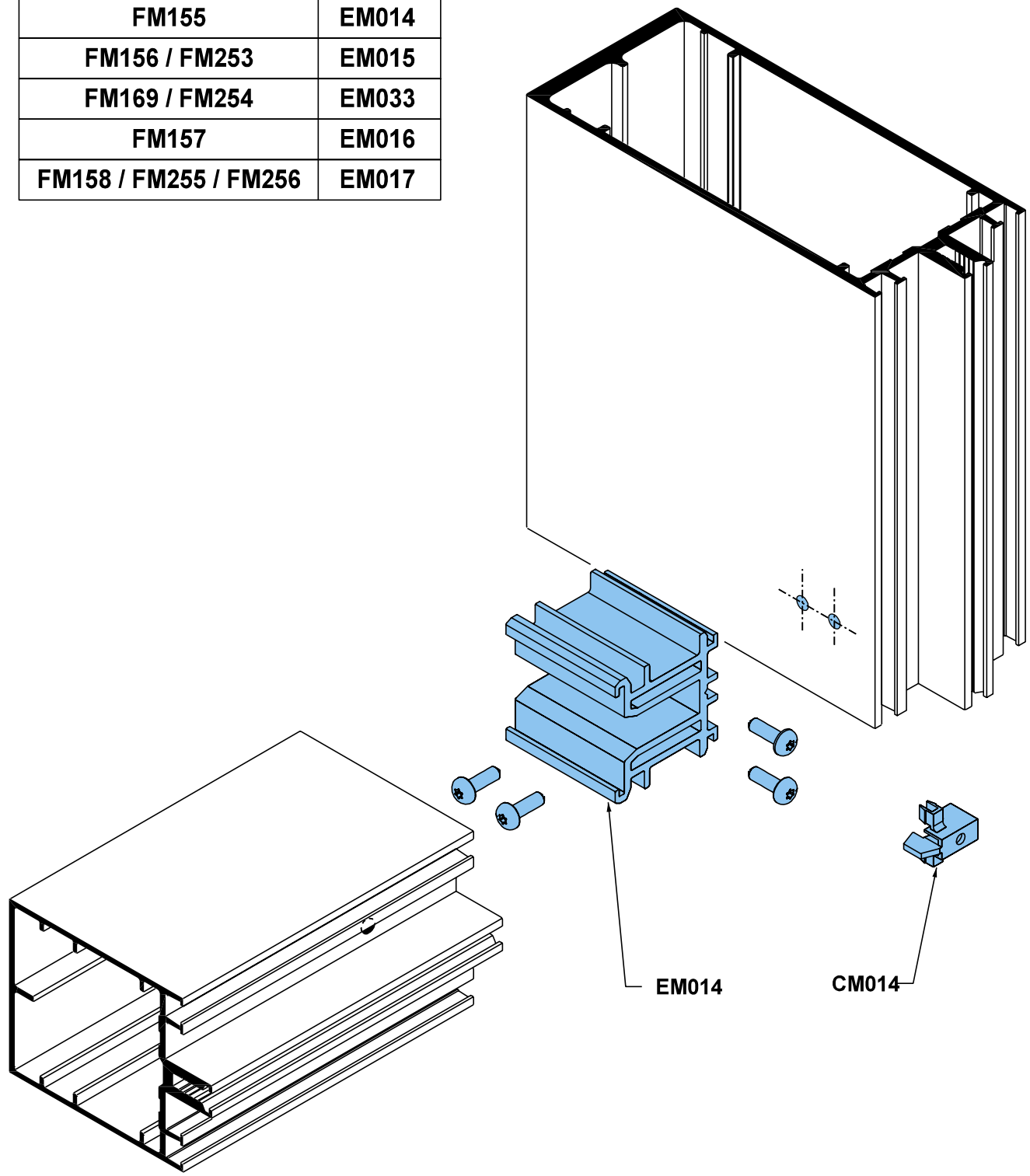


geffc017

Assembly methods

Side mounting

Transom	Connector
FM166 / FM252	**EM008**
FM155	**EM014**
FM156 / FM253	**EM015**
FM169 / FM254	**EM033**
FM157	**EM016**
FM158 / FM255 / FM256	**EM017**



geffc018

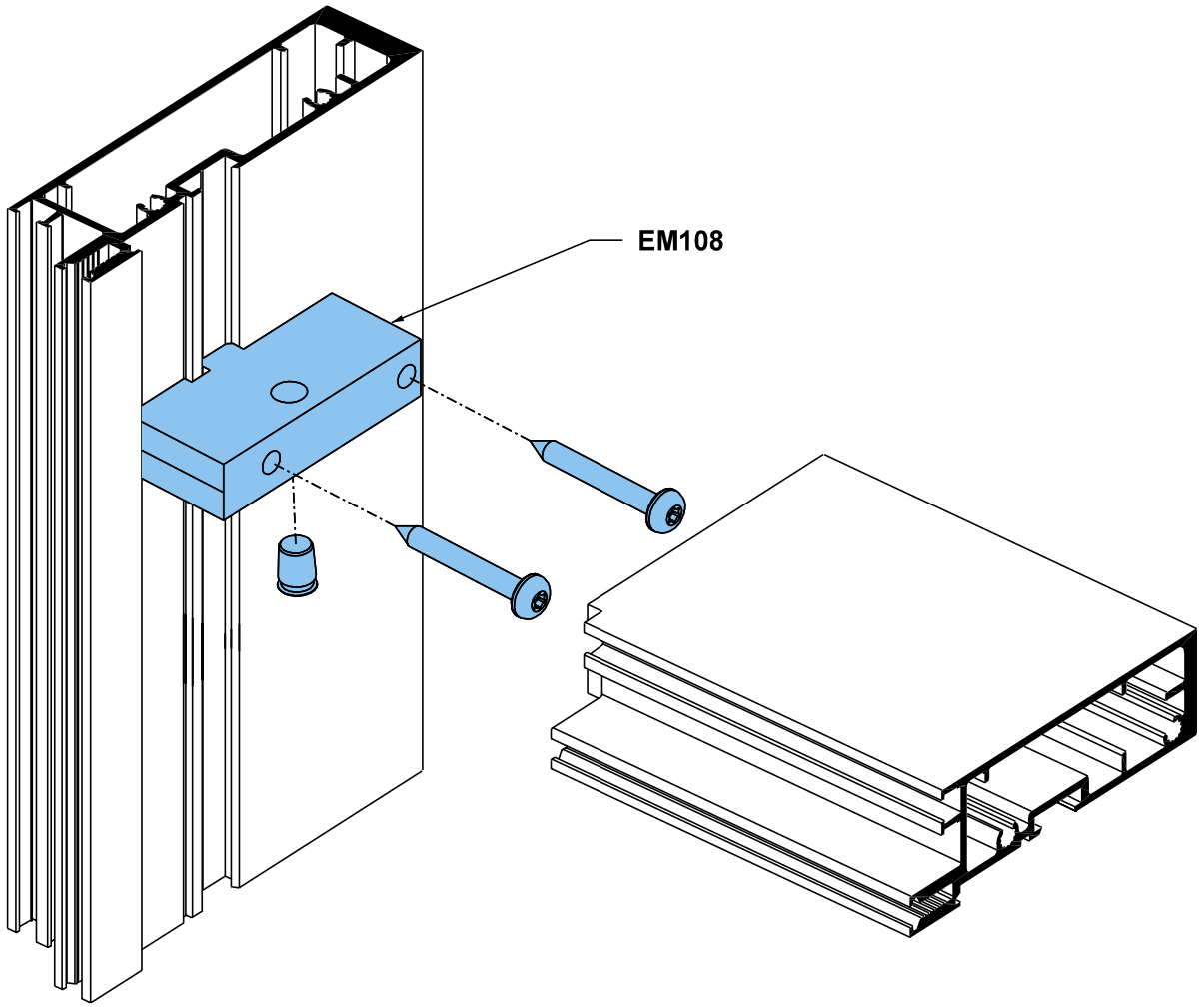
TECHNAL®

Assembly methods

Half-grid with connectors

Transom	Connector
FM264	**EM107**
FM262	**EM108**
FM263	**EM107**

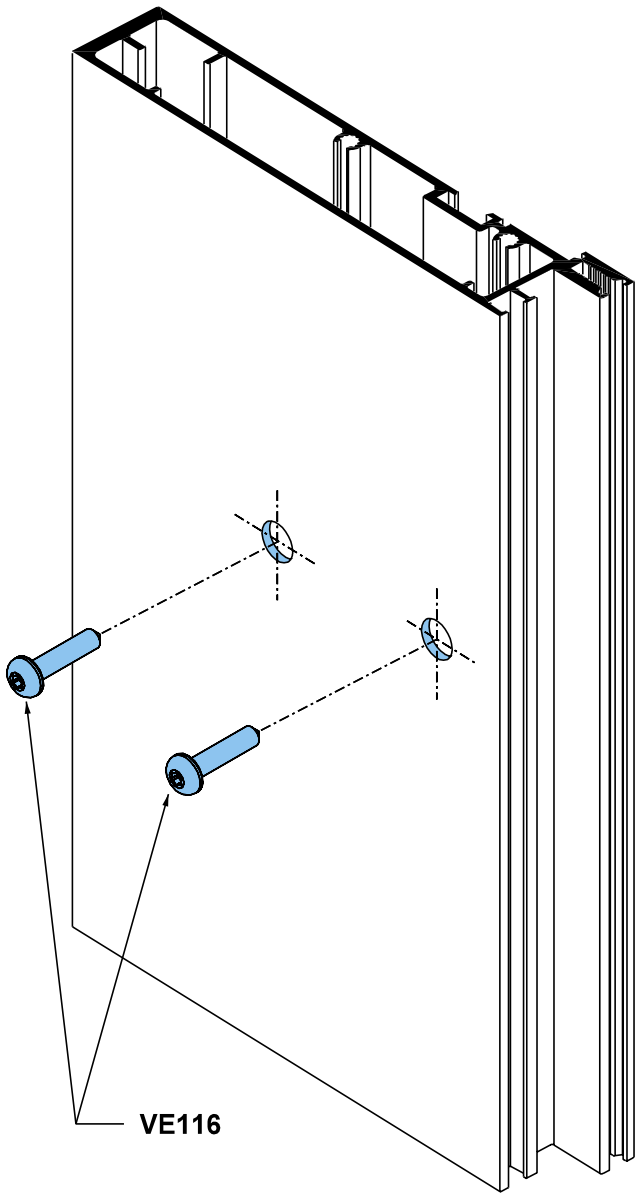
FM261 screw securing only

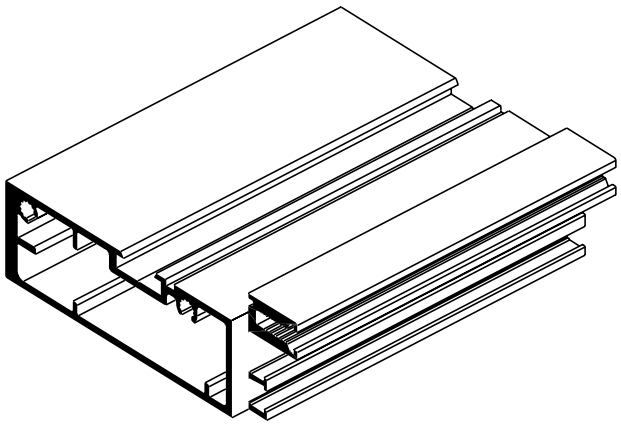


geffc019

Assembly methods

Half-grid with screws



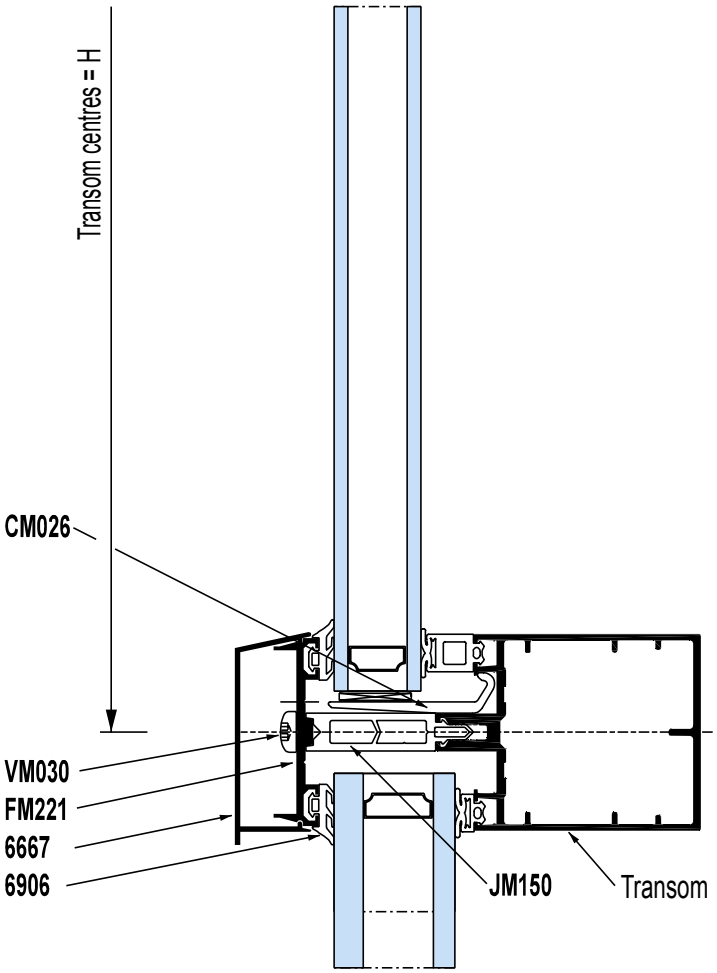


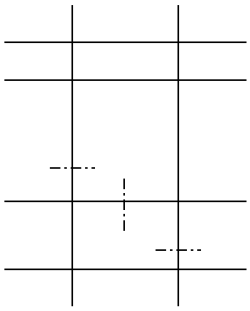
geffc020

TECHNAL®

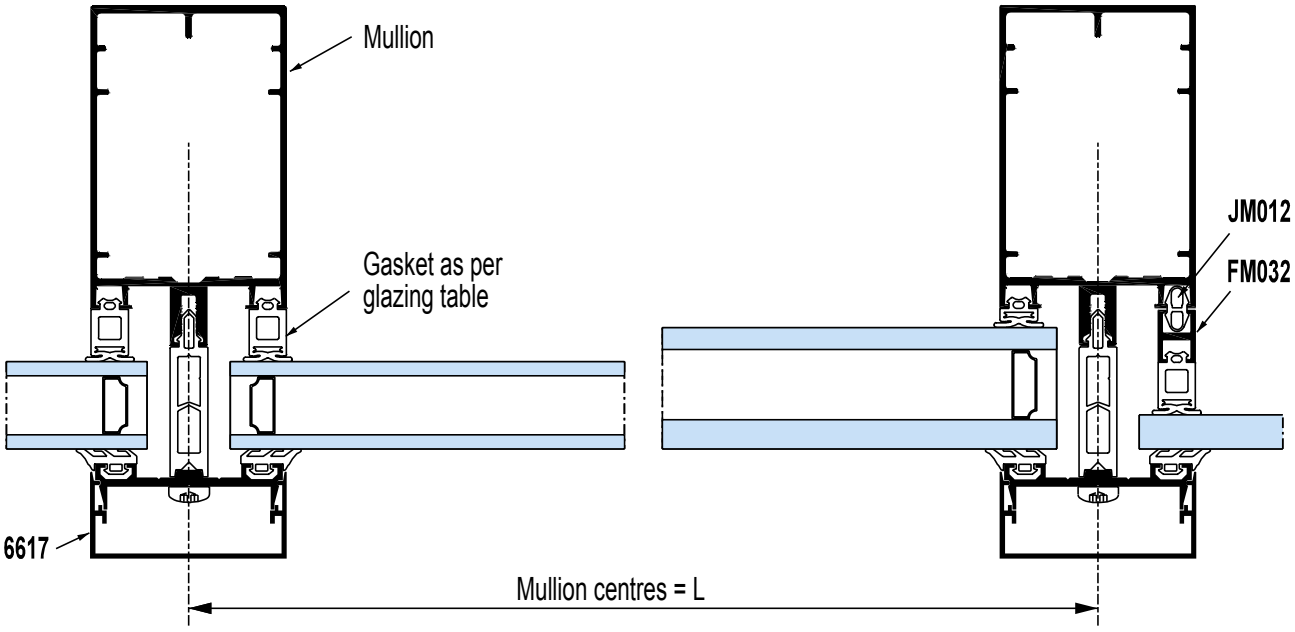
Applications

Grid effect fixed frame





Glazing dimensions
Height = H-22
Length = L-22



geffc043

PROFILES

cutting allowance = 0.5mm

Reference	Preparation	Quantity	Cutting formula
Mullion as per inertia		As per grid	H as per grid
Transom as per inertia		As per grid	L - 52
FM032 Glazing bead		As per infill	H - 30 L - 52
Mullion cap		As per grid	H as per grid
Transom cap		As per grid	L - 53
FM221 Pressure plate		As per grid	H as per grid L - 61

WEATHERING PROFILES

Reference	Quantity and dimensions
Internal glazing gasket as per table	2 L / 2 H
JM012 Bead clip gasket for FM032	See glazing bead
JM150 Spacer gasket for pressure plate	H as per frame L - 92
6906 4mm external glazing gasket	2 L / 2 H

ACCESSORIES

FACE MOUNTING ASSEMBLY

Reference	Quantity	Description
EM070	2 per trans.	Face mounting junction
VE116	2 per trans.	CBLX screw ST 4.8 x 32 C
VM034	4 per trans.	FX screw ST 4.8 x 19 C
EM009	4 per trans.	Anti Rotation Spigot as per uasge chart (p.20)

SIDE MOUNTING ASSEMBLY

Connector as per trans.	2 per trans.	Connector
CM014	2 per trans.	Connector plug for side mounting

CM026	2 per trans.in accord -ance with DTU 39	Glazing block support
CM100	2 per trans.	Grid effect connector plug
VM030	5 / m	CBLX type 2 screw ST 5.5 x 50 C
6911	2 per trans.	Pressure plug for FM221
EM143	1 per cap	Pop rivet for cap fixing

TOOLS

MACHINING FOR FRONT MOUNTING

Reference	Description
OM100	Tool for EM070 connector

MACHINING FOR SIDE MOUNTING

OM006	Drill jig for mullion side mounting connector
OM004	Template for side mounting

MACHINING FOR PRESSURE PLATE AND CAP

OM118	Freestanding tool for pressure plate and cap drainage

OM023	Pair of gasket scissors
OM042	Gasket roller
W150	Butyl cartridge, black

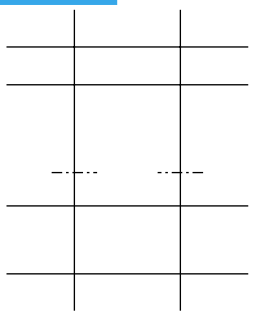
See fabrication catalogue for machining

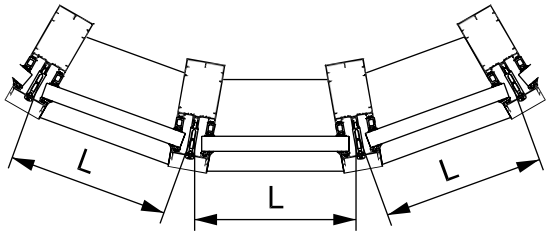
geffc044

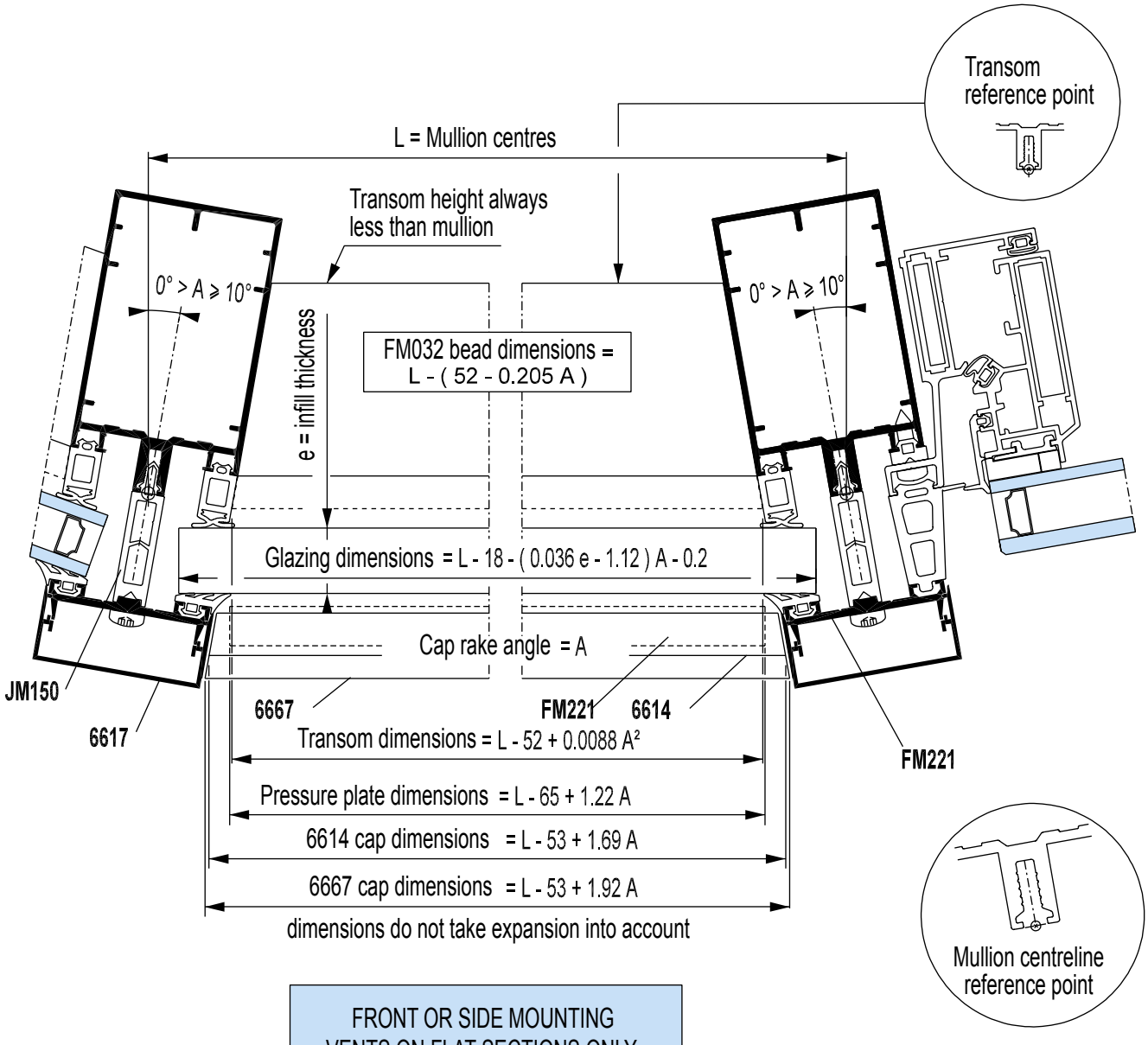
TECHNAL®

Applications

Grid effect fixed frame convex architectural façade (0-10° max.)







FRONT OR SIDE MOUNTING
VENTS ON FLAT SECTIONS ONLY

geffc047

PROFILES

cutting allowance = 0.5mm

Reference		Preparation	Quantity	Cutting formula
Mullion as per inertia			As per grid	H as per grid
Transom as per inertia			As per grid	As per formula
FM032	Glazing bead		As per infill	H - 30 L as per formula
6617	Mullion cap		As per grid	H as per grid
6614 or 6667	Transom cap		As per grid	L as per formula
FM221	Pressure plate		As per grid	H as per grid L as per formula

WEATHERING PROFILES

Reference	Quantity and dimensions
Internal glazing gasket as per table	2 L / 2 H
JM012 Bead clip gasket for FM032	See glazing bead
JM150 Spacer gasket for pressure plate	H and L as per frame
6906 4mm external glazing gasket	2 L / 2 H

ACCESSORIES

FACE MOUNTING ASSEMBLY

Reference	Quantity	Description
EM070	2 per trans.	Face mounting junction
VE116	2 per trans.	CBLX screw ST 4.8 x 32 C
VM034	4 per trans.	FX screw ST 4.8 x 19 C
EM009	2 per trans.	Anti Rotation Spigot as per usage chart

SIDE MOUNTING ASSEMBLY

FM093 profile to be cut according to transom and angula	2 per trans.	Connector
VE101	8 per trans.	CBLX screw ST 4.8 x 16 C
CM014	2 per trans.	Connector plug for side mounting

CM026	2 per trans.in accord -ance with DTU 39	Glazing block support
CM100	2 per trans.	Grid effect connector plug
VM030	5 / m	CBLX type 2 screw ST 5.5 x 50 C
6911	2 per trans.	Pressure plug for FM221
EM143	1 per cap	Pop rivet for cap fixing

geffc046

TOOLS

MACHINING FOR FRONT MOUNTING

Reference	Description
OM100	Tool for EM070 connector

MACHINING FOR SIDE MOUNTING

OM006	Drill jig for mullion side mounting connector
OM004	Template for side mounting

MACHINING FOR PRESSURE PLATE AND CAP

OM118	Freestanding tool for pressure plate and cap drainage

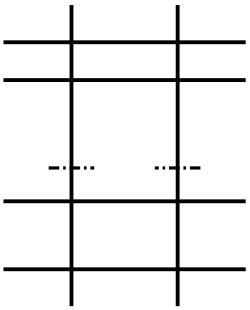
OM023	Pair of gasket scissors
OM042	Gasket roller
W150	Butyl cartridge, black

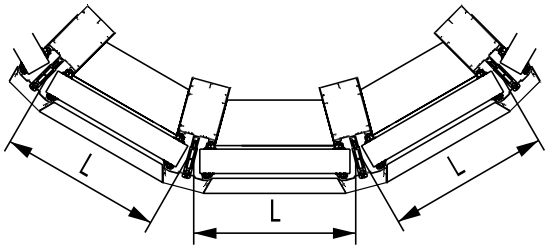
See fabrication catalogue for machining

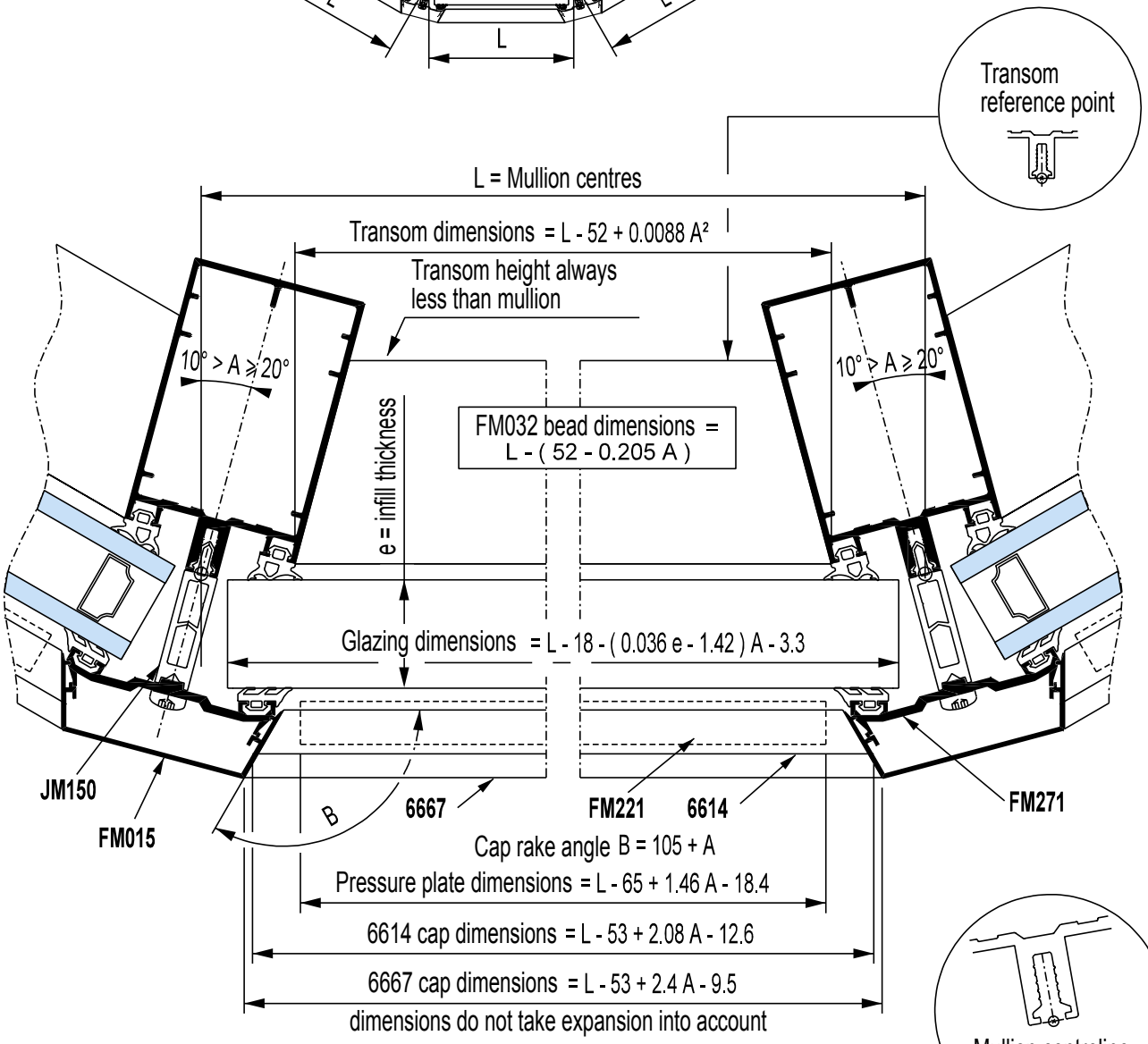
TECHNAL®

Applications

Grid effect fixed frame convex architectural façade (10°-20° max.)







SIDE MOUNTING ONLY WITH FM093
PROFILE TO BE CUT TO ANGLE
VENTS ON FLAT SECTIONS ONLY

geffc051

PROFILES

cutting allowance = 0.5mm

Reference		Preparation	Quantity	Cutting formula
Mullion as per inertia			As per grid	H as per grid
Transom as per inertia			As per grid	As per formula
FM032	Glazing bead		As per infill	H - 30 L as per formula
FM015	Mullion cap		As per grid	H as per grid
6614 or 6667	Transom cap		As per grid	As per formula
FM271	Mullion pressure plate		As per grid	H as per grid
FM221	Transom pressure plate		As per grid	L as per formula

WEATHERING PROFILES

Reference	Quantity and dimensions
Internal glazing gasket as per table	2 L / 2 H
JM012 Bead clip gasket for FM032	See glazing bead
JM150 Spacer gasket for pressure plate	H and L as per frame
6906 4mm external glazing gasket	2 L / 2 H

ACCESSORIES

SIDE MOUNTING ASSEMBLY

Reference	Quantity	Description
FM093 profile to be cut according to transom and angula	2 per trans.	Connector
VE101	8 per trans.	CBLX screw ST 4.8 x 16 C
CM014	2 per trans.	Connector plug for side mounting

CM026	2 per trans.in accord -ance with DTU 39	Glazing block support
VE102	4 / m	CBLX screw ST 4.8 x 22 C
VM030	5 / m	CBLX type 2 screw ST 5.5 x 50 C
6911	2 per trans.	Pressure plug for FM221
EM143	1 per cap	Pop rivet for cap fixing

geffc052

TOOLS

MACHINING FOR SIDE MOUNTING

Reference	Description
OM006	Drill jig for mullion side mounting connector
OM004	Template for side mounting

MACHINING FOR PRESSURE PLATE AND CAP

OM118	Freestanding tool for pressure plate and cap drainage

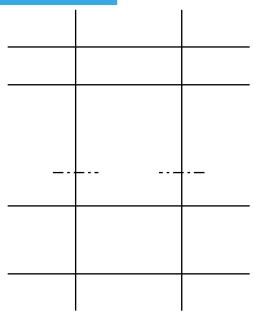
OM023	Pair of gasket scissors
OM042	Gasket roller
W150	Butyl cartridge, black

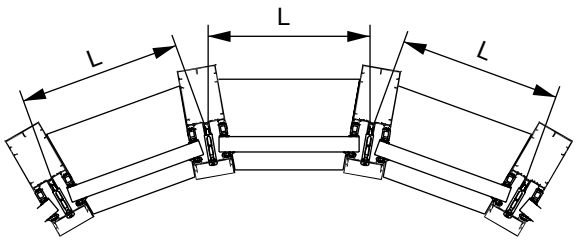
See fabrication catalogue for machining

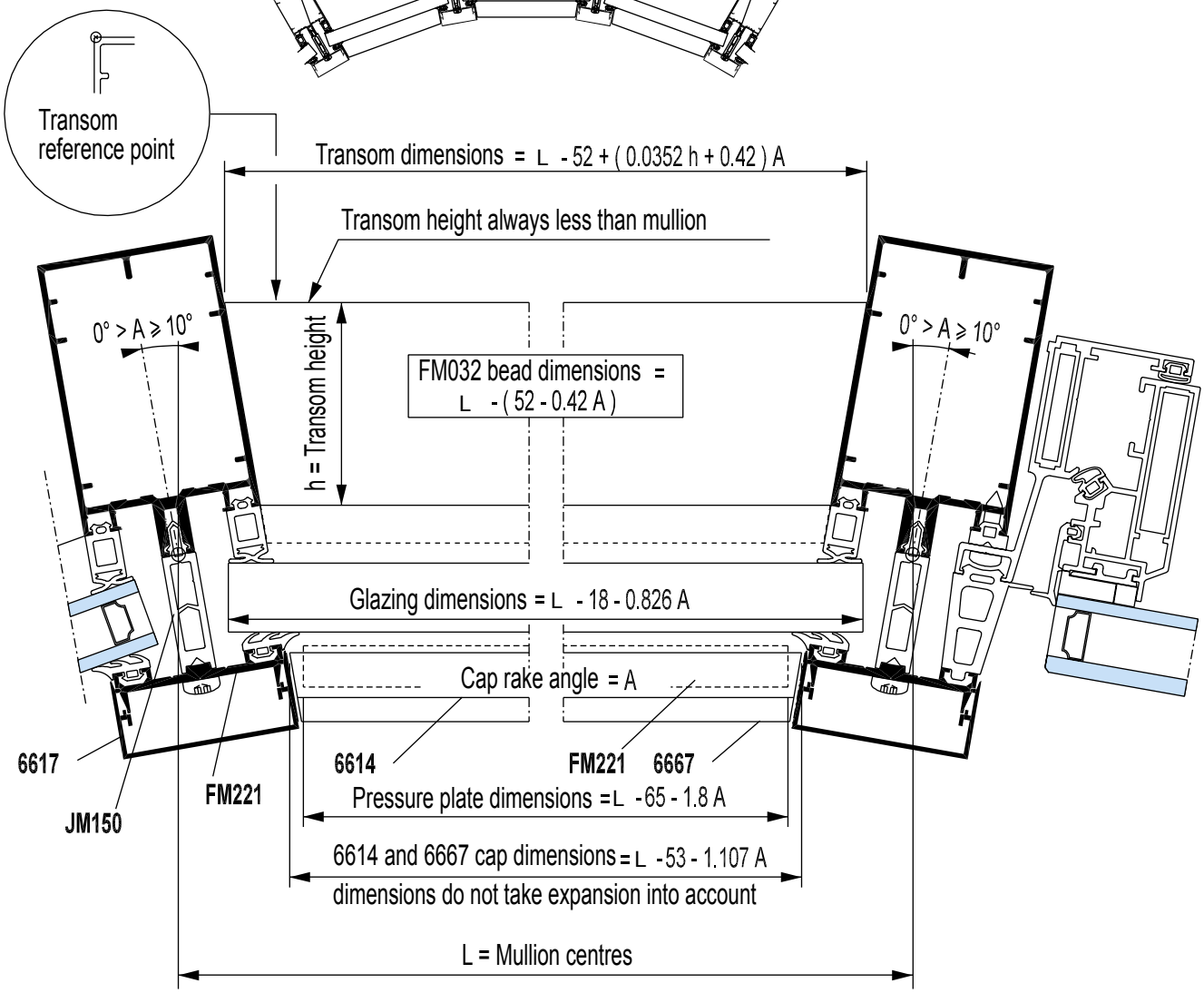
TECHNAL®

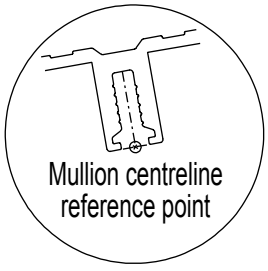
Applications

Grid effect fixed frame concave architectural façade (0-10° max.)









FRONT OR SIDE MOUNTING
VENTS ON FLAT SECTIONS ONLY

geffc151

PROFILES

cutting allowance = 0.5mm

Reference		Preparation	Quantity	Cutting formula
Mullion as per inertia			As per grid	H as per grid
Transom as per inertia			As per grid	As per formula
FM032	Glazing bead		As per infill	H - 30 L as per formula
6617	Mullion cap		As per grid	H as per grid
6614 or 6667	Transom cap		As per grid	As per formula
FM221	Pressure plate		As per grid	H as per grid L as per formula

WEATHERING PROFILES

Reference	Quantity and dimensions
Internal glazing gasket as per table	2 L / 2 H
JM012 Bead clip gasket for FM032	See glazing bead
JM150 Spacer gasket for pressure plate	H and L as per frame
6906 4mm external glazing gasket	2 L / 2 H

ACCESSORIES

SIDE MOUNTING ASSEMBLY

Reference	Quantity	Description
FM093 profile to be cut according to transom and angula	2 per trans.	Connector
VE101	8 per trans.	CBLX screw ST 4.8 x 16 C
CM014	2 per trans.	Connector plug for side mounting

CM026	2 per trans.in accord -ance with DTU 39	Glazing block support
CM100	2 per trans.	Grid effect connector plug
VM030	5 / m	CBLX type 2 screw ST 5.5 x 50 C
6911	2 per trans.	Pressure plug for FM221
EM143	1 per cap	Pop rivet for cap fixing

geffc048

TOOLS

MACHINING FOR SIDE MOUNTING

Reference	Description
OM006	Drill jig for mullion side mounting connector
OM004	Template for side mounting

MACHINING FOR PRESSURE PLATE AND CAP

OM118	Freestanding tool for pressure plate and cap drainage

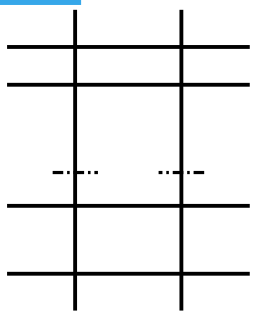
OM023	Pair of gasket scissors
OM042	Gasket roller
W150	Butyl cartridge, black

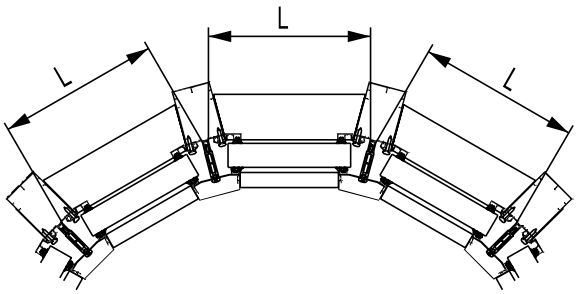
See fabrication catalogue for machining

TECHNAL®

Applications

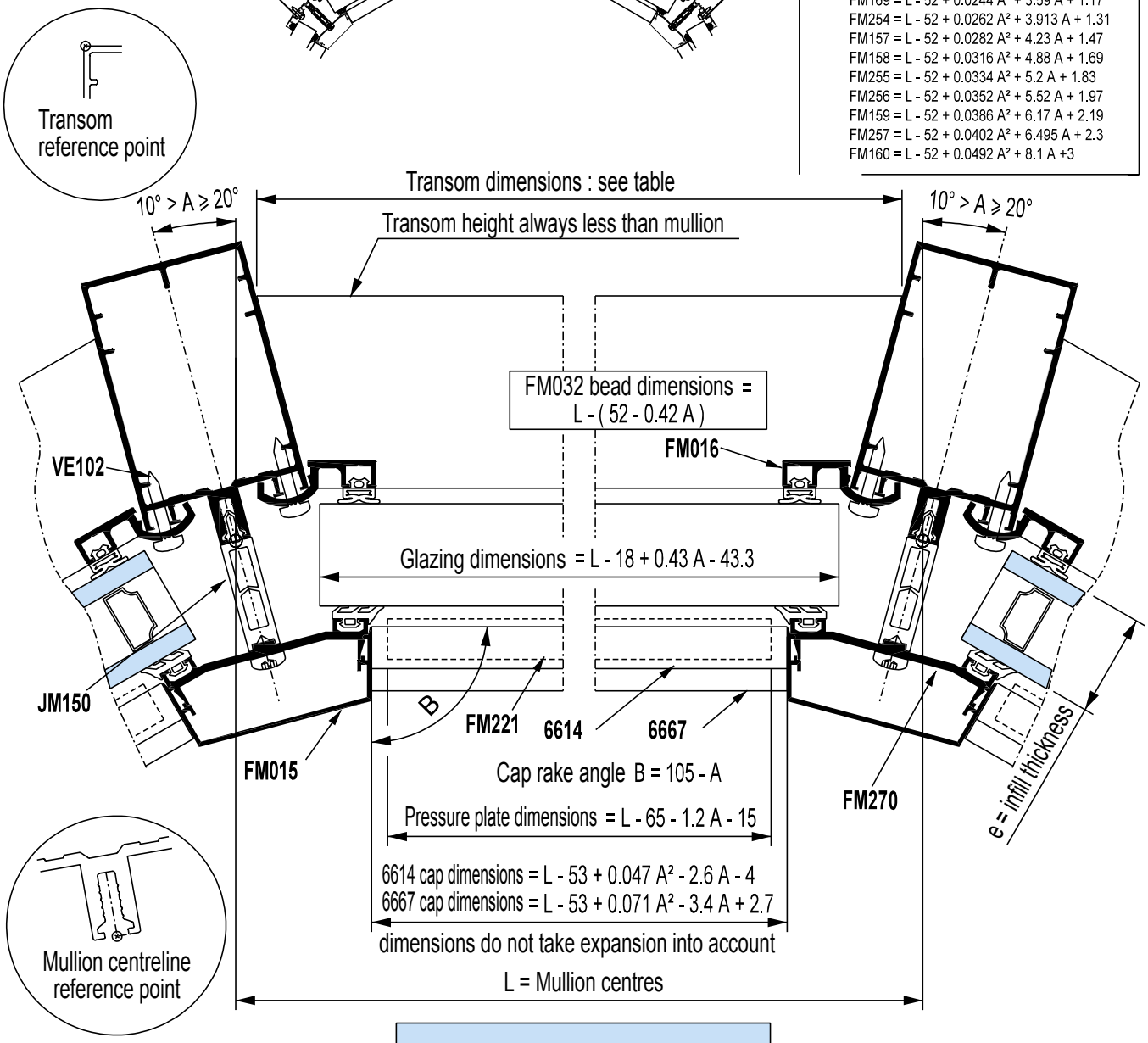
Grid effect fixed frame concave architectural façade (10°-20° max.)





Transom dimensions by reference number

FM165 = L - 52 + 0.011 A² + A + 0.23
FM166 = L - 52 + 0.014 A² + 1.65 A + 0.45
FM252 = L - 52 + 0.0156 A² + 1.98 A + 0.54
FM155 = L - 52 + 0.0174 A² + 2.3 A + 0.67
FM156 = L - 52 + 0.0208 A² + 2.95 A + 0.89
FM253 = L - 52 + 0.0228 A² + 3.264 A + 1.09
FM169 = L - 52 + 0.0244 A² + 3.59 A + 1.17
FM254 = L - 52 + 0.0262 A² + 3.913 A + 1.31
FM157 = L - 52 + 0.0282 A² + 4.23 A + 1.47
FM158 = L - 52 + 0.0316 A² + 4.88 A + 1.69
FM255 = L - 52 + 0.0334 A² + 5.2 A + 1.83
FM256 = L - 52 + 0.0352 A² + 5.52 A + 1.97
FM159 = L - 52 + 0.0386 A² + 6.17 A + 2.19
FM257 = L - 52 + 0.0402 A² + 6.495 A + 2.3
FM160 = L - 52 + 0.0492 A² + 8.1 A +3



SIDE MOUNTING ONLY WITH FM093
PROFILE TO BE CUT TO ANGLE
VENTS ON FLAT SECTIONS ONLY

geffc049

PROFILES

cutting allowance = 0.5mm

Reference		Preparation	Quantity	Cutting formula
Mullion as per inertia			As per grid	H as per grid
Transom as per inertia			As per grid	As per formula
FM016	Groove section restoration		As per grid	H - 52.5
FM032	Glazing bead		As per infill	H - 30 L as per formula
FM015	Mullion cap		As per grid	H as per grid
6614 or 6667	Transom cap		As per grid	As per formula
FM270	Mullion pressure plate		As per grid	H as per grid
FM221	Transom pressure plate		As per grid	L as per formula

WEATHERING PROFILES

Reference	Quantity and dimensions
Internal glazing gasket as per table	2 L / 2 H
JM012 Bead clip gasket for FM032	See glazing bead
JM150 Spacer gasket for pressure plate	H and L as per frame
6906 4mm external glazing gasket	2 L / 2 H

ACCESSORIES

SIDE MOUNTING ASSEMBLY

Reference	Quantity	Description
FM093 profile to be cut according to transom and angula	2 per trans.	Connector
VE101	8 per trans.	CBLX screw ST 4.8 x 16 C
CM014	2 per trans.	Connector plug for side mounting

CM026	2 per trans.in accord -ance with DTU 39	Glazing block support
VE102	4 / m	CBLX screw ST 4.8 x 22 C
VM030	5 / m	CBLX type 2 screw ST 5.5 x 50 C
6911	2 per trans.	Pressure plug for FM221
EM143	1 per cap	Pop rivet for cap fixing

TOOLS

MACHINING FOR SIDE MOUNTING

Reference	Description
OM006	Drill jig for mullion side mounting connector
OM004	Template for side mounting

MACHINING FOR PRESSURE PLATE AND CAP

OM118	Freestanding tool for pressure plate and cap drainage

OM023	Pair of gasket scissors
OM042	Gasket roller
W150	Butyl cartridge, black

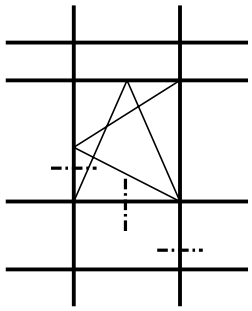
See fabrication catalogue for machining

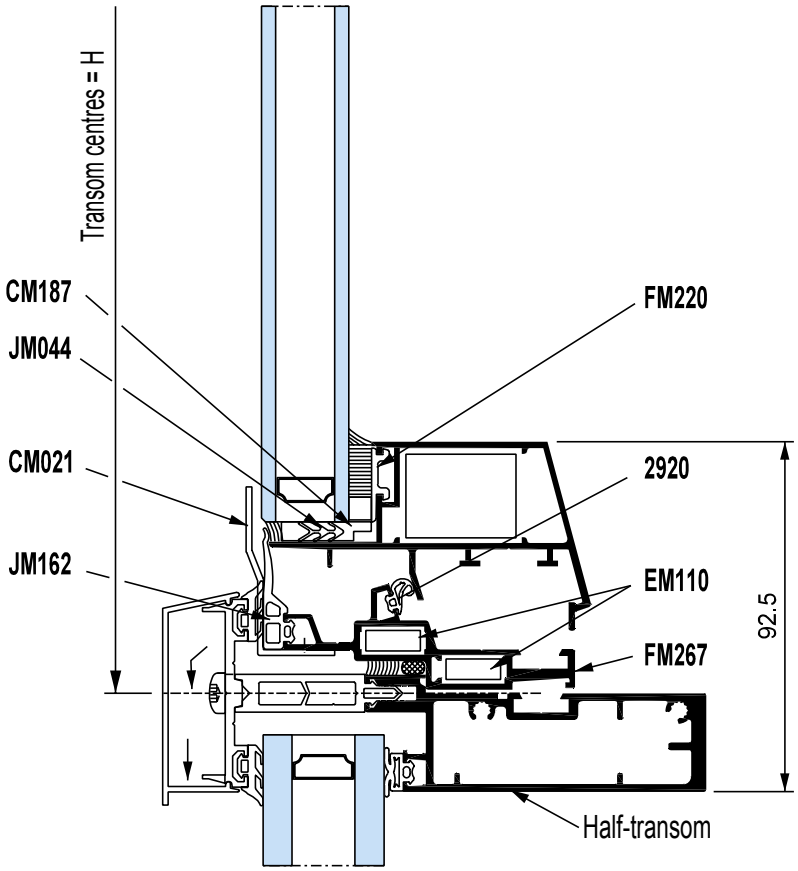
geffc050

TECHNAL®

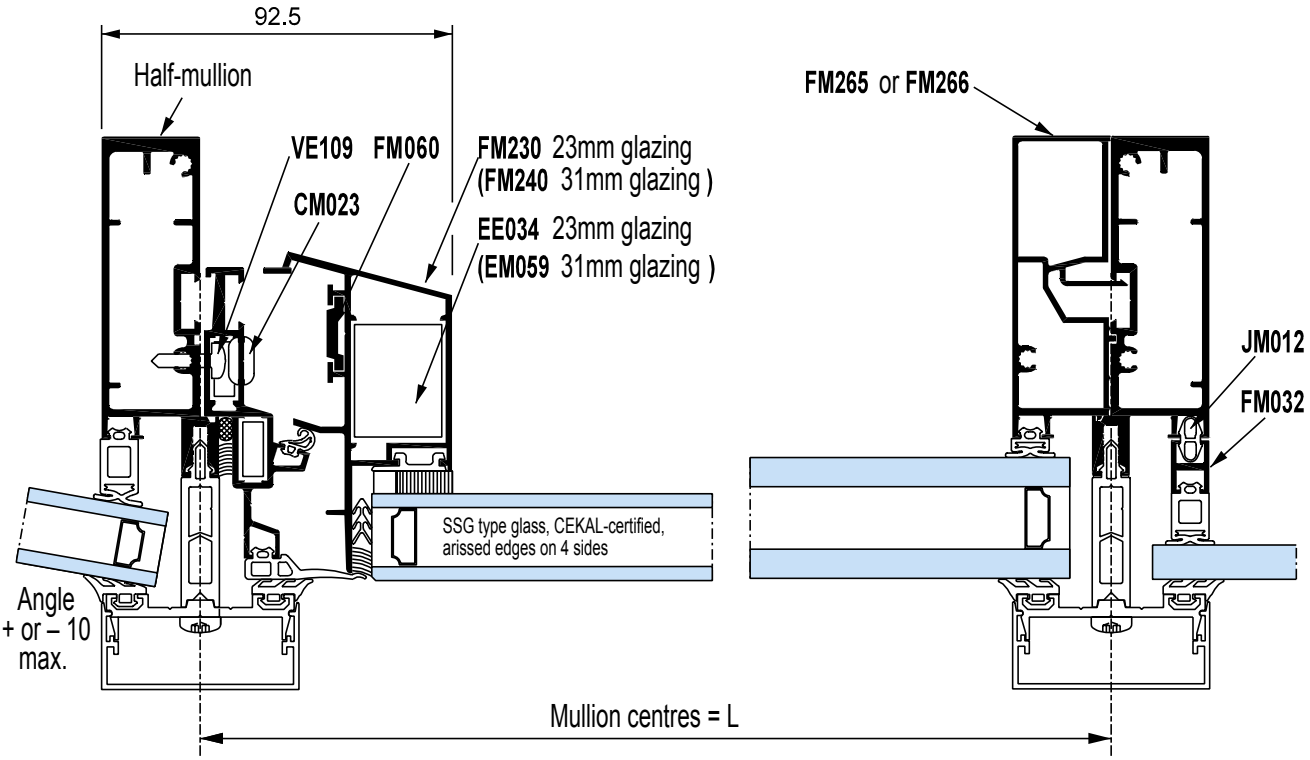
Applications

Grid effect tilt-and-turn, inward-opening, bottom-hung





Glazing dimensions
Height = H-91
Length = L-91



geffc055

GRID PROFILES

cutting allowance = 0.5mm

Reference	Preparation	Quantity	Cutting formula
Half-mullion as per inertia		As per grid	H as per grid
Half-transom as per inertia		As per grid	L
FM265 or FM266 Groove section restoration		As per grid	H - 52
Transom between fixed frames according to inertia		As per grid	L or L - 52
FM032 Glazing bead		As per infill	H - 30 L - 52

VENT PROFILES

cutting allowance = 0.5mm

Reference	Preparation	Quantity	Cutting formula		
FM267 Fixed frame		2 2	L - 2 H - 2		
FM230 Glazing 23mm or FM 240 Glazing 31mm		2 2	L - 34 H - 34	Vent + thermal break	L - 34 H - 34
FM220 Bonding profile		2 2	L - 91 H - 91		
FM060 Espagnolette rod		1	See hardware		

GRID WEATHERING PROFILES

Reference	Quantity and dimensions
Internal glazing gasket as per table	2 L / 2 H
JM012 Gasket for FM032	See glazing bead

VENT WEATHERING PROFILES

Reference	Quantity and dimensions
JM044 6mm Foam seal	2 L / 2 H
2920 Rebate gasket	2 L / 2 H
JM162 Tilt-and-turn external gasket	2 L / 2 H

GRID ACCESSORIES

Reference	Quantity	Description
EM107	2 per half-trans.	Connector for FM263 FM264
EM108	2 per half-trans.	Connector for FM262
VE116	2 per half-trans.	CBLX screw ST 4.8 x 32 C

Assembly variant 1/2 trans. 80/100/140 on 1/2 mull.

VE116	4 per half-trans.	CBLX screw ST 4.8 x 32 C

Assembly: face mounting, transom on rebate

EM070	2 per trans.	Face mounting junction
VE116	2 per trans.	CBLX screw ST 4.8 x 32 C
VM034	4 per trans.	FX screw ST 4.8 x 19 C
EM009	2 per trans.	Anti rotation spigot as per usage charts

Assembly: side mounting, transom on rebate

Connector as per trans.	2 per trans.	Connector
CM014	2 per trans.	Connector plug

VENT ACCESSORIES

Reference	Quantity	Description
EE034	4	Corner cleat 25 x 32.2
EM059	4	Corner cleat 25 x 25
EM110	8	Corner cleat 7.5 x 16.5
CM187	2 per frame	Glazing wedge for edged vent
CM021	1	Tilt-and-turn security part
VE109	4 / m	CBLX self-tapping screw ST 4.8 x 16 footprint 20
CM023	4 / m	Finishing plug

See hardware section

VENT TOOLS

Reference	Description
OM120	Freestanding tool for vent machining
OM021	Stepped drill bit Ø 10 and Ø 5
OM066	Set of cutting wedges

GRID TOOLS

Reference	Description
OM100	Tool for EM070 connector
OM006	Drill jig for BG side mounting connector
OM004	Template for side mounting
OM023	Pair of gasket scissors
OM042	Gasket roller
W150	Butyl cartridge, black

For caps and pressure plates, see GRID ASPECT FIXED FRAMES section

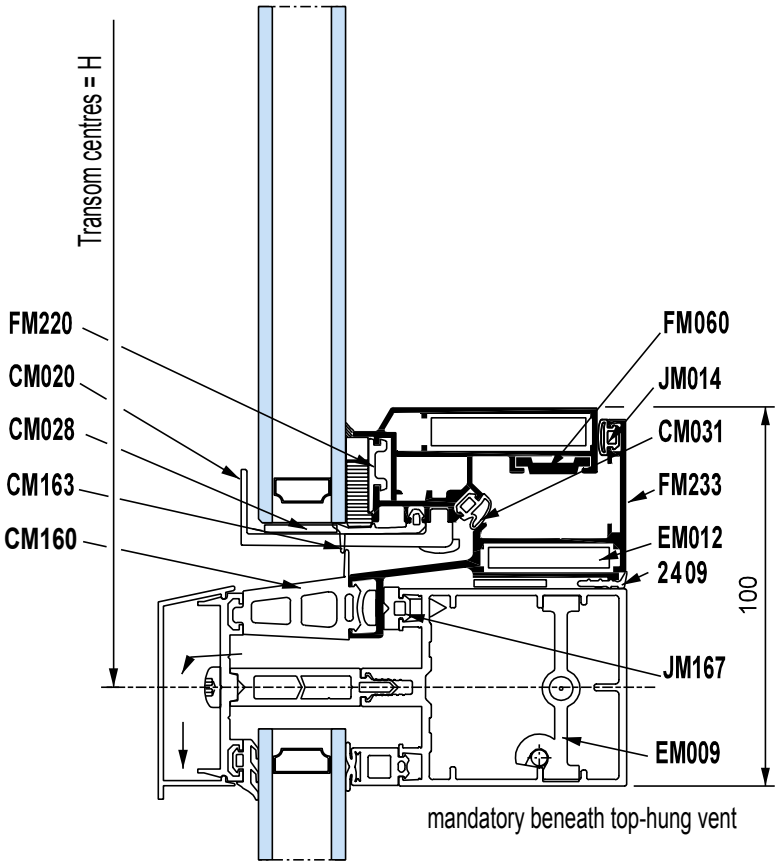
See fabrication catalogue for machining

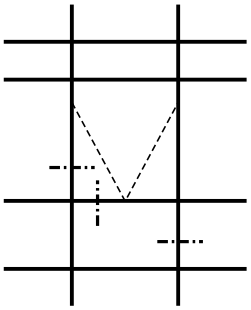
geffc056

TECHNAL®

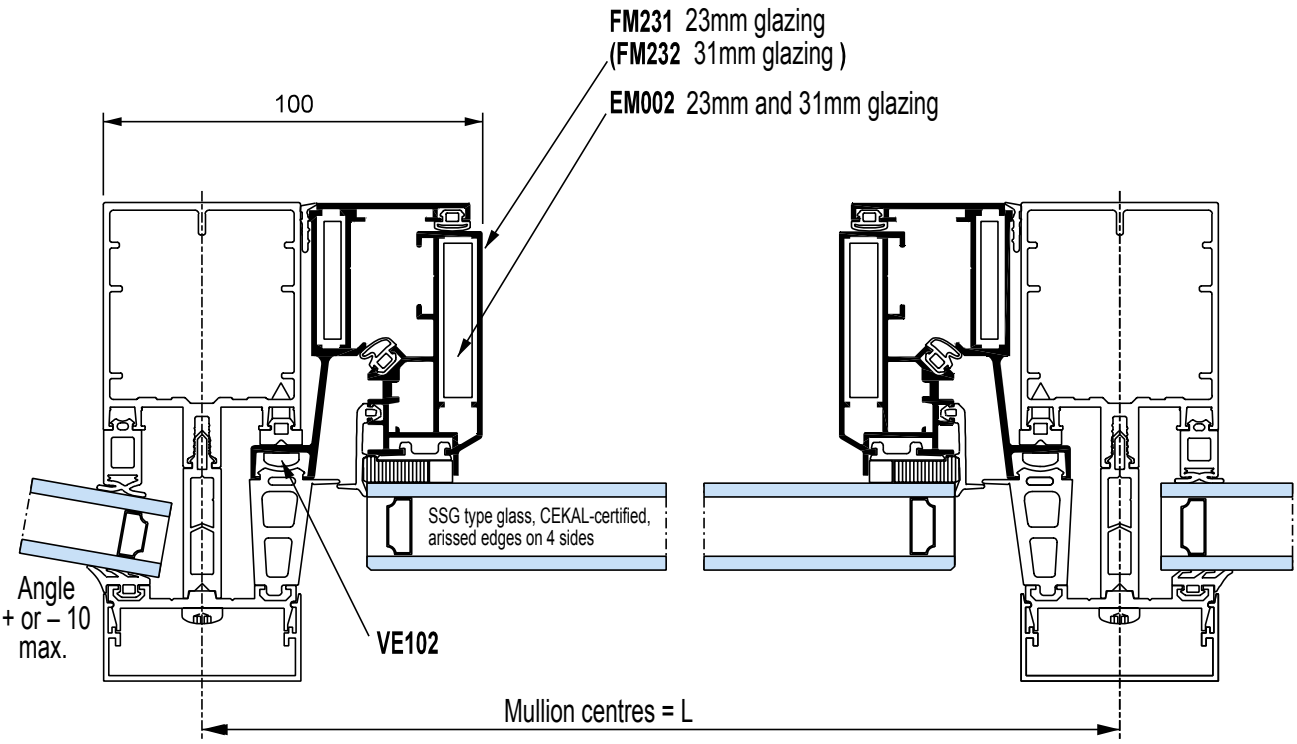
Applications

Grid effect top-hung





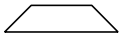
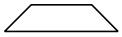
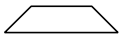
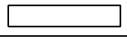
Glazing dimensions
Height = H-88
Length = L-87



geffc059

VENT PROFILES

cutting allowance = 0.5mm

Reference		Preparation	Quantity	Cutting formula		
FM233	Fixed frame		2 2	L - 26 H - 26		
FM231 FM 232	Vent glazing 23mm Vent glazing 31mm		2 2	L - 87 H - 87	Vent + thermal break	L - 87 H - 87
FM220	Bonding profile		2 2	L - 92 H - 92		
FM060	Espagnolette rod		1	See hardware		

VENT WEATHERING PROFILES

Reference		Quantity and dimensions
JM014	Top-hung rebate gasket	2 L / 2 H
CM160	Top-hung rebate gasket	2 L / 2 H
JM167	Outer frame top-hung external gasket	2 L / 2 H
2409	Top-hung outer frame finishing gasket	2 L / 2 H
CM031	Internal weather gasket	1 (4 angles 1x1m)
CM163	Corner gasket for top-hung grid effect	1 (4 angles 1x1m)

GRID ACCESSORIES

EM009	2	Anti Rotation Spigot (mandatory with top-hung)

VENT ACCESSORIES

Reference	Quantity	Description
EM002	4	Corner cleat 10 x 43
EM012	4	Corner cleat 7.5 x 34
CM028	2 per frame	SSG Glazing wedge
CM020	1	Top-hung security part
VE102	4 / m	CBLX screw ST 4.8 x 22 C

See hardware

VENT TOOLS

Reference	Description
OM009	Drill jig for top-hung 45 vent frame friction stays
OM112	Drill jig for top-hung outer frame friction stays
OM065	Drill jig for keeps and locking wedges
OM119	Freestanding tool for vent machining
OM113	Drill jig for top-hung security plates
OM066	Set of cutting wedges
OM023	Pair of gasket scissors

For grid, caps and pressure plates, see GRID ASPECT FIXED FRAMES section

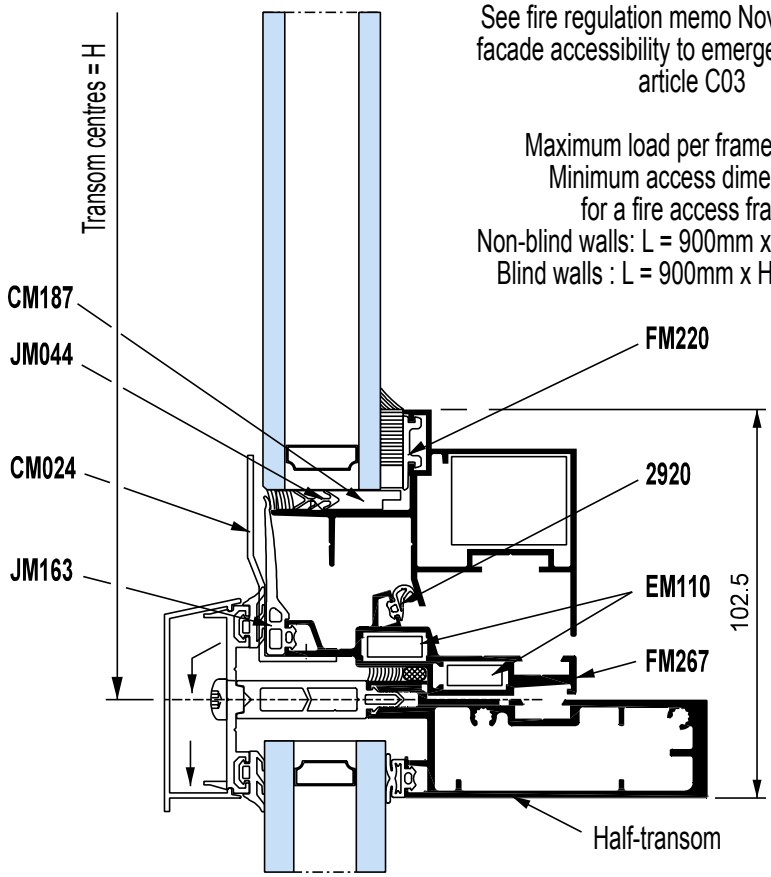
See fabrication catalogue for machining

geffc060

TECHNAL®

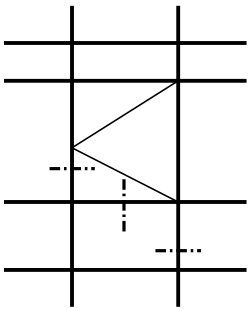
Applications

Grid effect fire access



See fire regulation memo November 1990, facade accessibility to emergency services, article C03

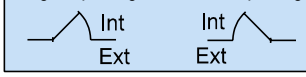
Maximum load per frame = 100kg
Minimum access dimensions
for a fire access frame
Non-blind walls: L = 900mm x H = 1300mm
Blind walls : L = 900mm x H = 1800mm



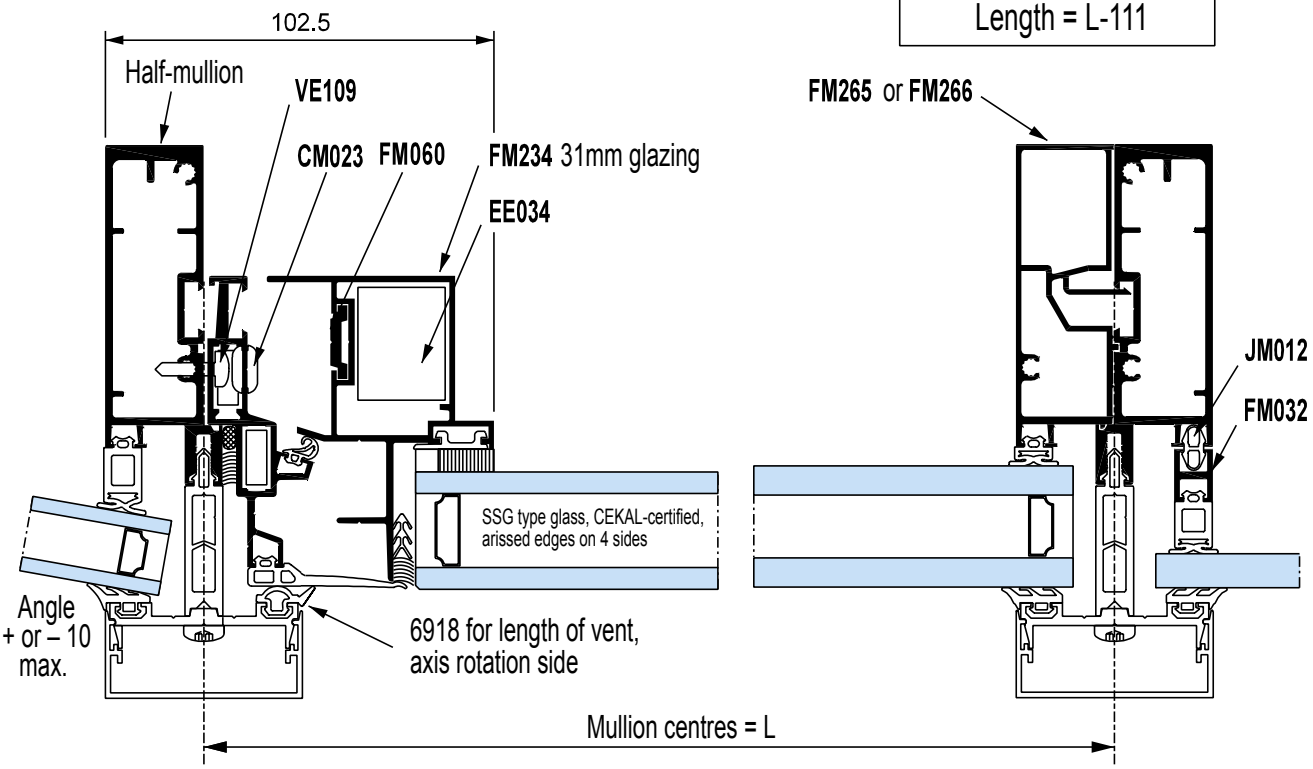
MANDATORY

In no circumstances may this frame be used for any function other than fire access. Note that a security installation should be planned for if the lower transom of the fire access is lower than 900mm (support bar, protecting element)

Direction of opening



Glazing dimensions
Height = H-111
Length = L-111



geffc063

GRID PROFILES

cutting allowance = 0.5mm

Reference	Preparation	Quantity	Cutting formula
Half-mullion as per inertia		As per grid	H as per grid
Half-transom as per inertia		As per grid	L
FM265 or FM266 Groove section restoration		As per grid	H - 52
Transom between fixed frames according to inertia		As per grid	L or L - 52
FM032 Glazing bead		As per infill	H - 30 L - 52

VENT PROFILES

cutting allowance = 0.5mm

Reference	Preparation	Quantity	Cutting formula		
FM267 Fixed frame		2 2	L - 2 H - 2		
FM234 Vent glazing 31mm		2 2	L - 34 H - 34	Vent + thermal break	L - 34 H - 34
FM220 Bonding profile		2 2	L - 111 H - 111		
FM060 Espagnolette rod		1	See hardware		

GRID WEATHERING PROFILES

Reference	Quantity and dimensions
Internal glazing gasket as per table	2 L / 2 H
JM012 Bead clip gasket for FM032	See glazing bead
6918 3mm thick glazing gasket	H

VENT WEATHERING PROFILES

Reference	Quantity and dimensions
JM044 6mm Foam seal	2 L / 2 H
2920 Rebate gasket	2 L / 2 H
JM162 Tilt-and-turn external gasket	2 L / 2 H

GRID ACCESSORIES

Reference	Quantity	Description
EM107	2 per half-trans.	Connector for FM263 FM264
EM108	2 per half-trans.	Connector for FM262
VE116	2 per half-trans.	CBLX screw ST 4.8 x 32 C

Assembly variant 1/2 trans. 80/100/140 on 1/2 mull.

VE116	4 per half-trans.	CBLX screw ST 4.8 x 32 C

Assembly: face mounting, transom on rebate

EM070	2 per trans.	Face mounting junction
VE116	2 per trans.	CBLX screw ST 4.8 x 32 C
VM034	4 per trans.	FX screw ST 4.8 x 19 C
EM009	2 per trans.	Anti rotation spigot as per usage charts

Assembly: side mounting, transom on rebate

Connector as per trans.	2 per trans.	Connector
CM014	2 per trans.	Connector plug

VENT ACCESSORIES

Reference	Quantity	Description
EE034	4	Corner cleat 25 x 32.2
EM110	8	Corner cleat 7.5 x 16.5
CM187	2 per frame	Glazing wedge for edged vent
CM024	1	Fire access safety part
VE109	4 / m	CBLX self-tapping screw ST 4.8 x 16 footprint 20
CM023	4 / m	Finishing plug

See hardware section

VENT TOOLS

Reference	Description
OM120	Freestanding tool for vent machining
OM021	Stepped drill bit Ø 10 and Ø 5
OM066	Set of cutting wedges

GRID TOOLS

Reference	Description
OM100	Tool for EM070 connector
OM006	Drill jig for BG side mounting connector
OM004	Template for side mounting
OM023	Pair of gasket scissors
OM042	Gasket roller
W150	Butyl cartridge, black

For caps and pressure plates, see GRID ASPECT FIXED FRAMES section

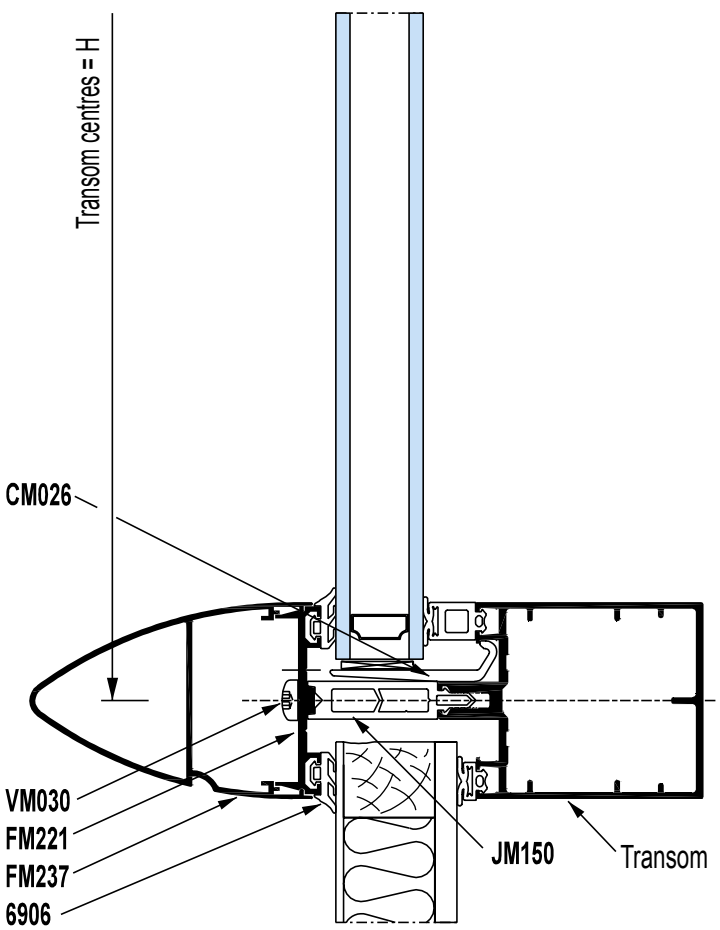
See fabrication catalogue for machining

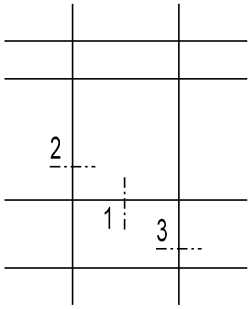
geffc064

TECHNAL®

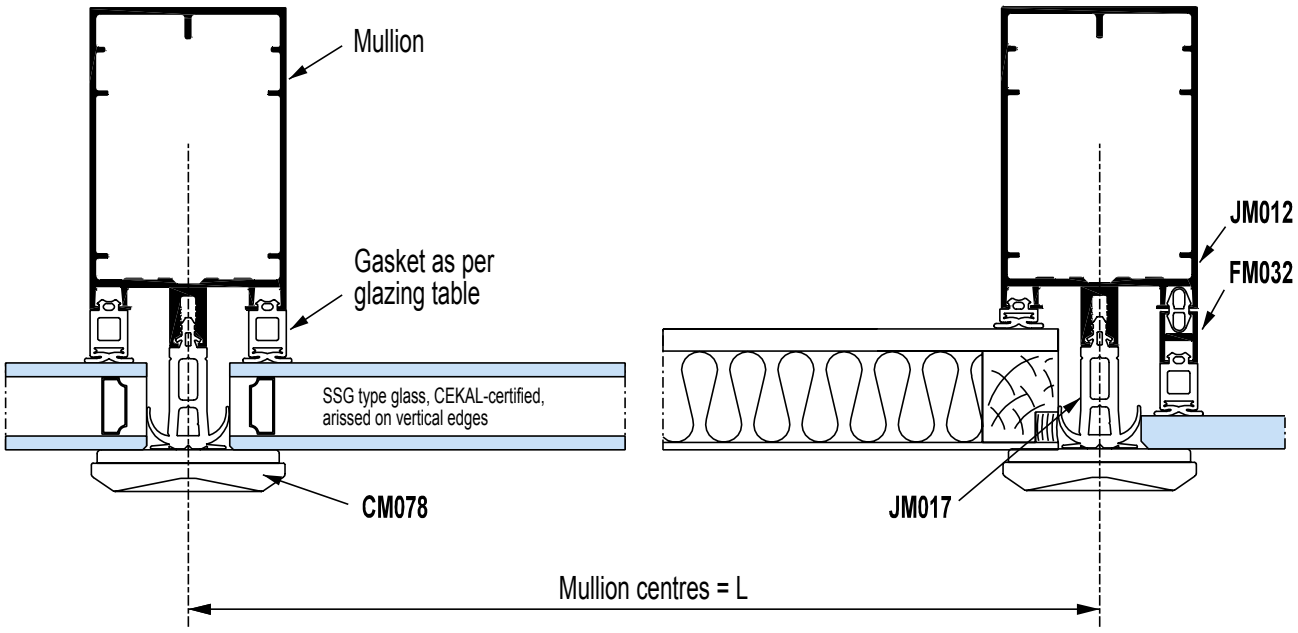
Applications

Horizontal line effect fixed frame





Glazing dimensions
Height = H-22
Length = L-22



geffc067

PROFILES

cutting allowance = 0.5mm

Reference	Preparation	Quantity	Cutting formula
Mullion as per inertia		As per grid	H as per grid
Transom as per inertia		As per grid	L - 52
FM032 Glazing bead		As per infill	H - 30 L - 52
* Transom cap		As per grid	L as per grid
* FM221 Pressure plate		As per grid	L as per grid

WEATHERING PROFILES

Reference	Quantity and dimensions
Internal glazing gasket as per table	2 L / 2 H
JM012 Bead clip gasket for FM032	See glazing bead
JM017 Horizontal line mullion gasket	H as per frame
JM150 Spacer gasket for pressure plate	L - 92 ±1
6906 4mm external glazing gasket	2 L / 2 H

ACCESSORIES

FACE MOUNTING ASSEMBLY

Reference	Quantity	Description
EM070	2 per trans.	Face mounting junction
VE116	2 per trans.	CBLX screw ST 4.8 x 32 C
VM034	4 per trans.	FX screw ST 4.8 x 19 C
EM009	2 per trans.	Anti Rotation Spigot

SIDE MOUNTING ASSEMBLY

Connector as per trans.	2 per trans.	Connector
CM014	2 per trans.	Connector plug for side mounting

CM026	2 per trans.in accord -ance with DTU 39	Glazing block support
CM140	1 per assemb.	Horizontal line connector plug
VM030	5 / m	CBLX type 2 screw ST 5.5 x 50 C
CM078	0 or 1	Pressure plate for horizontal line fixed light
EM143	1 per cap	Pop rivet for cap fixing

OPTION

CM027	1 per end cap	Cap cheek set for FM237
CM628		Splice bar for FM237

TOOLS

MACHINING FOR FRONT MOUNTING

Reference	Description
OM100	Tool for EM070 connector

MACHINING FOR SIDE MOUNTING

OM006	Drill jig for BG side mounting connector
OM004	Template for side mounting

OM023	Pair of gasket scissors
OM042	Gasket roller
W150	Butyl cartridge, black or grey

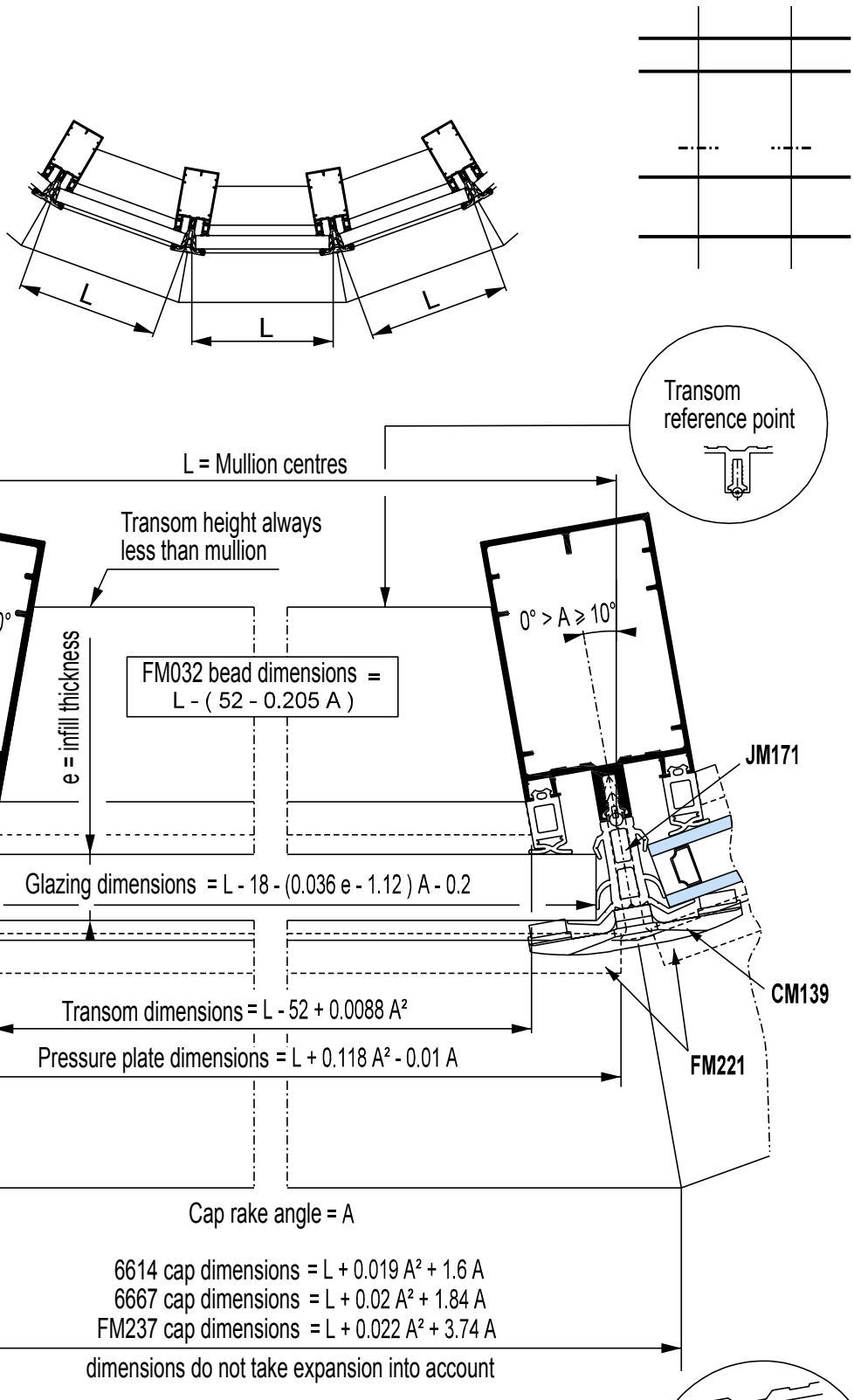
See fabrication catalogue for machining

geffc068

TECHNAL®

Applications

Horizontal line effect fixed frame convex architectural façade (0-10° max.)



geffc069

PROFILES

cutting allowance = 0.5mm

Reference	Preparation	Quantity	Cutting formula
Mullion as per inertia		As per grid	H as per grid
Transom as per inertia		As per grid	As per formula
FM032 Glazing bead		As per infill	H - 30 L as per formula
Transom cap		As per grid	As per formula
FM221 Pressure plate		As per grid	As per formula

WEATHERING PROFILES

Reference	Quantity and dimensions
Internal glazing gasket as per table	2 L / 2 H
JM012 Bead clip gasket for FM032	See glazing bead
JM171 Horizontal line architectural façade mullion gasket	H as per grid
JM150 Spacer gasket for pressure plate	L as per grid
6906 4mm external glazing gasket	2 L / 2 H

ACCESSORIES

FACE MOUNTING ASSEMBLY

Reference	Quantity	Description
EM070	2 per trans.	Face mounting junction
VE116	2 per trans.	CBLX screw ST 4.8 x 32 C
VM034	4 per trans.	FX screw ST 4.8 x 19 C
EM009	2 per trans.	Anti Rotation Spigot (see p.20)

SIDE MOUNTING ASSEMBLY

FM093 profile to be cut according to transom and angula	2 per trans.	Connector
VE101	8 per trans.	CBLX screw ST 4.8 x 16 C
CM014	2 per trans.	Connector plug for side mounting

CM026	2 per trans.in accord -ance with DTU 39	Glazing block support
CM140	1 per assemb.	Horizontal line connector plug
VM030	5 / m	CBLX type 2 screw ST 5.5 x 50 C
CM139	see charts	Pressure plate for horizontal line architectural façade
EM143	1 per cap	Pop rivet for cap fixing

geffc070

TOOLS

MACHINING FOR FRONT MOUNTING

Reference	Description
OM100	Tool for EM070 connector

MACHINING FOR SIDE MOUNTING

OM006	Drill jig for BG side mounting connector
OM004	Template for side mounting

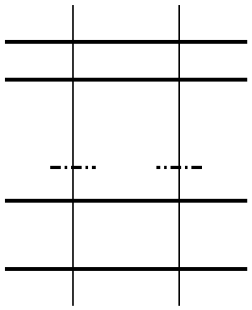
OM023	Pair of gasket scissors
OM042	Gasket roller
W150	Butyl cartridge, black

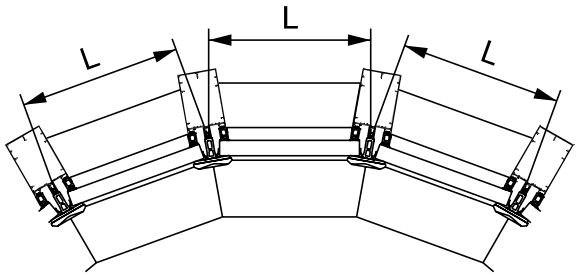
See fabrication catalogue for machining

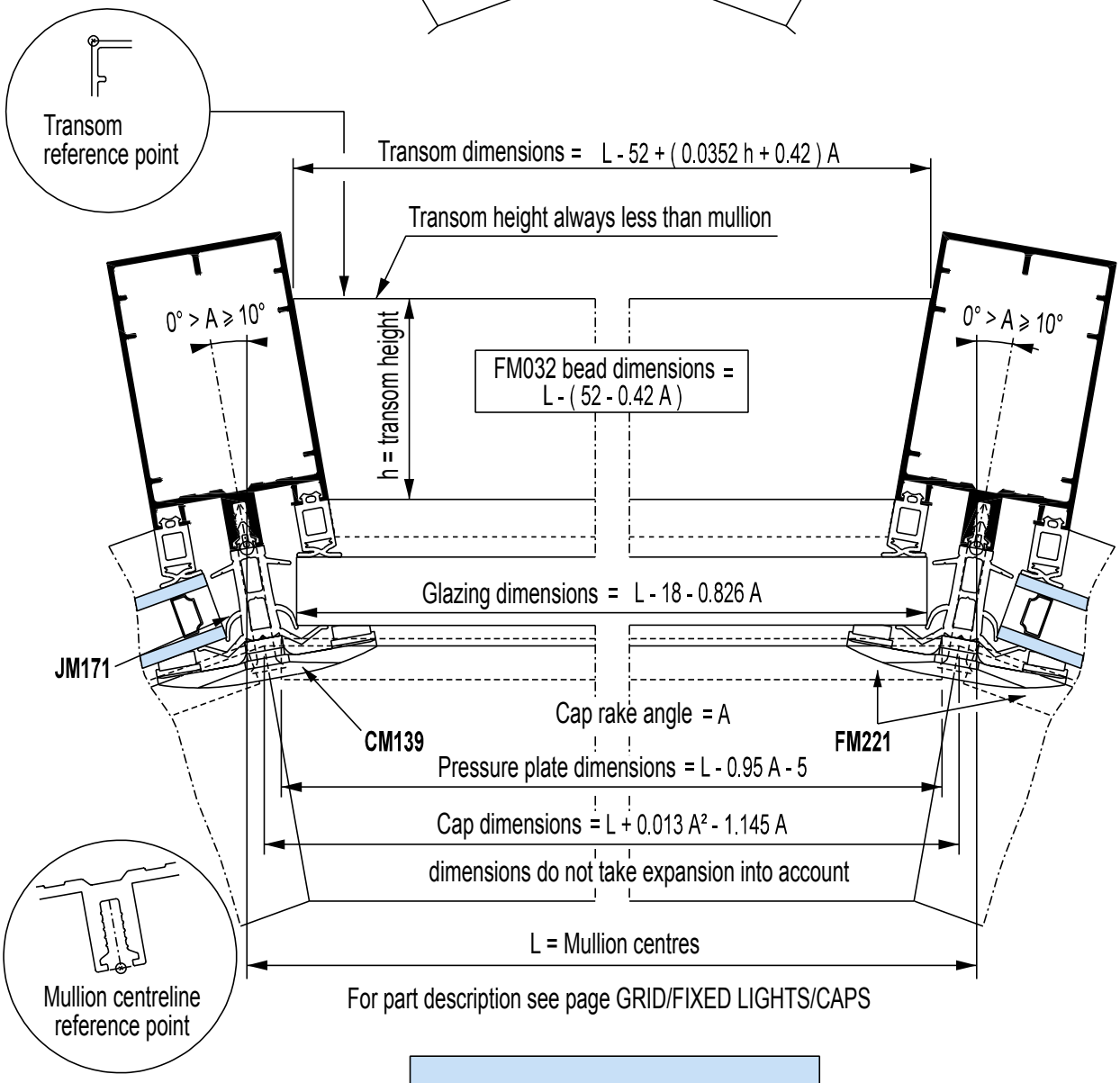
TECHNAL®

Applications

Horizontal line effect fixed frame concave architectural façade (0-10° max.)







For part description see page GRID/FIXED LIGHTS/CAPS

FRONT OR SIDE MOUNTING
VENTS ON FLAT SECTIONS ONLY

geffc071

PROFILES

cutting allowance = 0.5mm

Reference	Preparation	Quantity	Cutting formula
Mullion as per inertia		As per grid	H as per grid
Transom as per inertia		As per grid	As per formula
FM032 Glazing bead		As per infill	H - 30 L as per formula
Transom cap		As per grid	As per formula
FM221 Pressure plate		As per grid	As per formula

WEATHERING PROFILES

Reference	Quantity and dimensions
Internal glazing gasket as per table	2 L / 2 H
JM012 Bead clip gasket for FM032	See glazing bead
JM171 Horizontal line architectural façade mullion gasket	H as per grid
JM150 Spacer gasket for pressure plate	L as per grid
6906 4mm external glazing gasket	2 L / 2 H

ACCESSORIES

SIDE MOUNTING ASSEMBLY

Reference	Quantity	Description
FM093 profile to be cut according to transom and angula	2 per trans.	Connector
VE101	8 per trans.	CBLX screw ST 4.8 x 16 C
CM014	2 per trans.	Connector plug for side mounting

CM026	2 per trans.in accord -ance with DTU 39	Glazing block support
CM140	1 per assemb.	Horizontal line connector plug
VM030	5 / m	CBLX type 2 screw ST 5.5 x 50 C
CM139	see charts	Pressure plate for horizontal line architectural façade
EM143	1 per cap	Pop rivet for cap fixing

TOOLS

MACHINING FOR SIDE MOUNTING

Reference	Description
OM006	Drill jig for BG side mounting connector
OM004	Template for side mounting

OM023	Pair of gasket scissors
OM042	Gasket roller
W150	Butyl cartridge, black

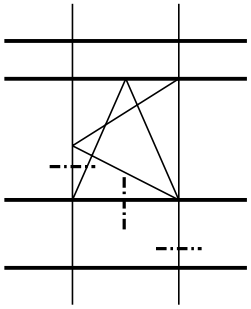
See fabrication catalogue for machining

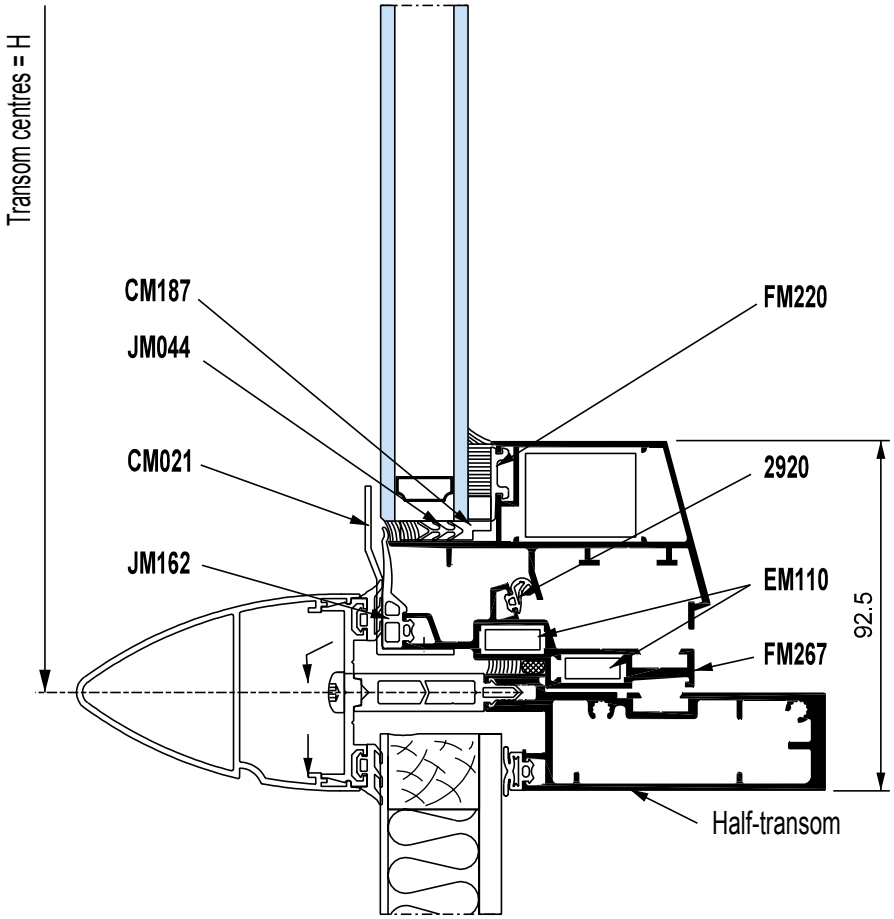
geffc072

TECHNAL®

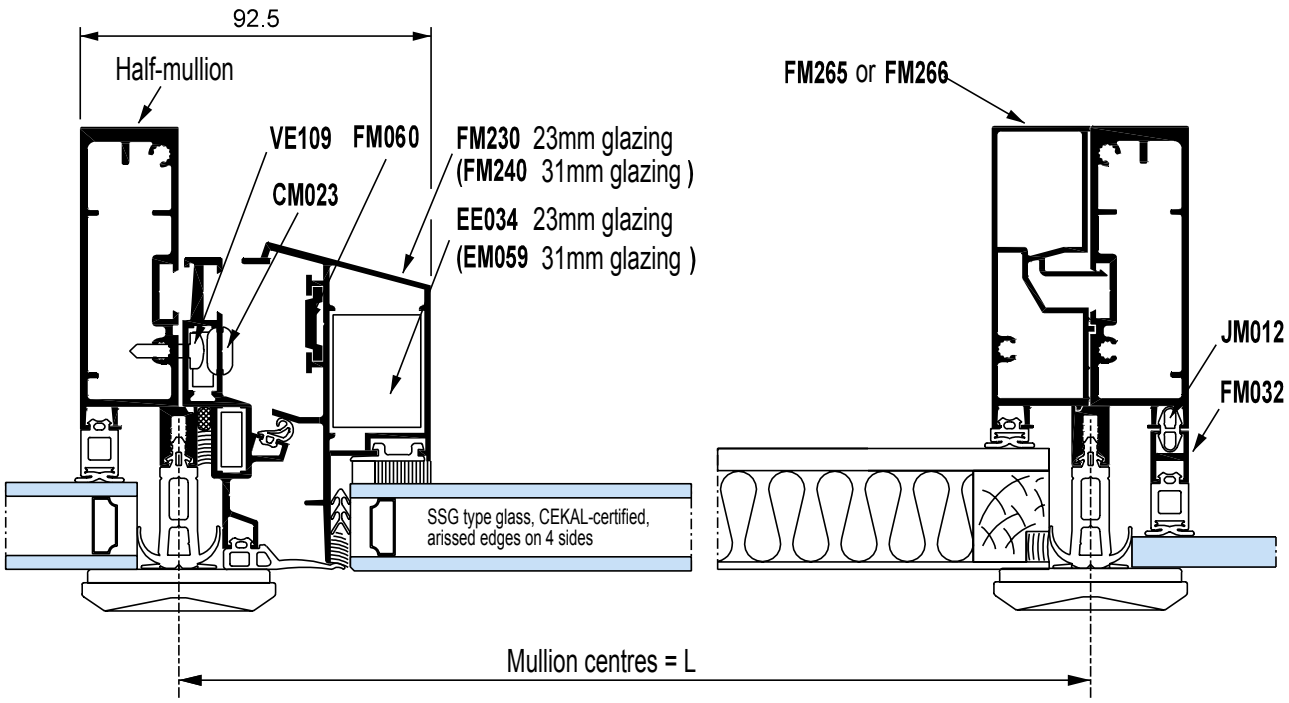
Applications

Horizontal line effect tilt-and-turn, inward-opening, bottom-hung





Glazing dimensions
Height = H-91
Length = L-91



geffc075

GRID PROFILES

cutting allowance = 0.5mm

Reference	Preparation	Quantity	Cutting formula
Half-mullion as per inertia		As per grid	H as per grid
Half-transom as per inertia		As per grid	L
FM265 or FM266 Groove section restoration		As per grid	H - 52
Transom between fixed frames according to inertia		As per grid	L or L - 52
FM032 Glazing bead		As per infill	H - 30 L - 52

VENT PROFILES

cutting allowance = 0.5mm

Reference	Preparation	Quantity	Cutting formula		
FM267 Fixed frame		2 2	L - 2 H - 2		
FM230 Vent glazing 23mm or FM 240 Vent glazing 31mm		2 2	L - 34 H - 34	Vent + thermal break	L - 34 H - 34
FM220 Bonding profile		2 2	L - 91 H - 91		
FM060 Espagnolette rod		1	See hardware		

GRID WEATHERING PROFILES

Reference	Quantity and dimensions
Internal glazing gasket as per table	2 L / 2 H
JM012 Bead clip gasket for FM032	See glazing bead

VENT WEATHERING PROFILES

Reference	Quantity and dimensions
JM044 6mm Foam seal	2 L / 2 H
2920 Rebate gasket	2 L / 2 H
JM162 Tilt-and-turn external gasket	2 L / 2 H

GRID ACCESSORIES

Reference	Quantity	Description
EM107	2 per half-trans.	Connector for FM263 FM264
EM108	2 per half-trans.	Connector for FM262
VE116	2 per half-trans.	CBLX screw ST 4.8 x 32 C

Assembly variant 1/2 trans. 80/100/140 on 1/2 mull.

VE116	4 per half-trans.	CBLX screw ST 4.8 x 32 C

Assembly: face mounting, transom on rebate

EM070	2 per trans.	Face mounting junction
VE116	2 per trans.	CBLX screw ST 4.8 x 32 C
VM034	4 per trans.	FX screw ST 4.8 x 19 C
EM009	2 per trans.	Anti rotation spigot as per usage charts

Assembly: side mounting, transom on rebate

Connector as per trans.	2 per trans.	Connector
CM014	2 per trans.	Connector plug

VENT ACCESSORIES

Reference	Quantity	Description
EE034	4	Corner cleat 25 x 32.2
EM059	4	Corner cleat 25 x 25
EM110	8	Corner cleat 7.5 x 16.5
CM187	2 per frame	Glazing wedge for edged vent
CM021	1	Tilt-and-turn security part
VE109	4 / m	CBLX self-tapping screw ST 4.8 x 16 footprint 20
CM023	4 / m	Finishing plug

See hardware section

VENT TOOLS

Reference	Description
OM120	Freestanding tool for vent machining
OM021	Stepped drill bit Ø 10 and Ø 5
OM066	Set of cutting wedges

GRID TOOLS

Reference	Description
OM100	Tool for EM070 connector
OM006	Drill jig for BG side mounting connector
OM004	Template for side mounting
OM023	Pair of gasket scissors
OM042	Gasket roller
W150	Butyl cartridge, black

For caps and pressure plates, see GRID ASPECT FIXED FRAMES section

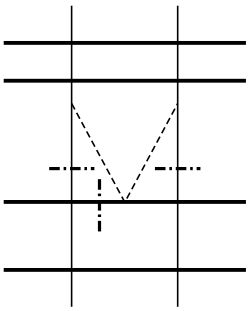
See fabrication catalogue for machining

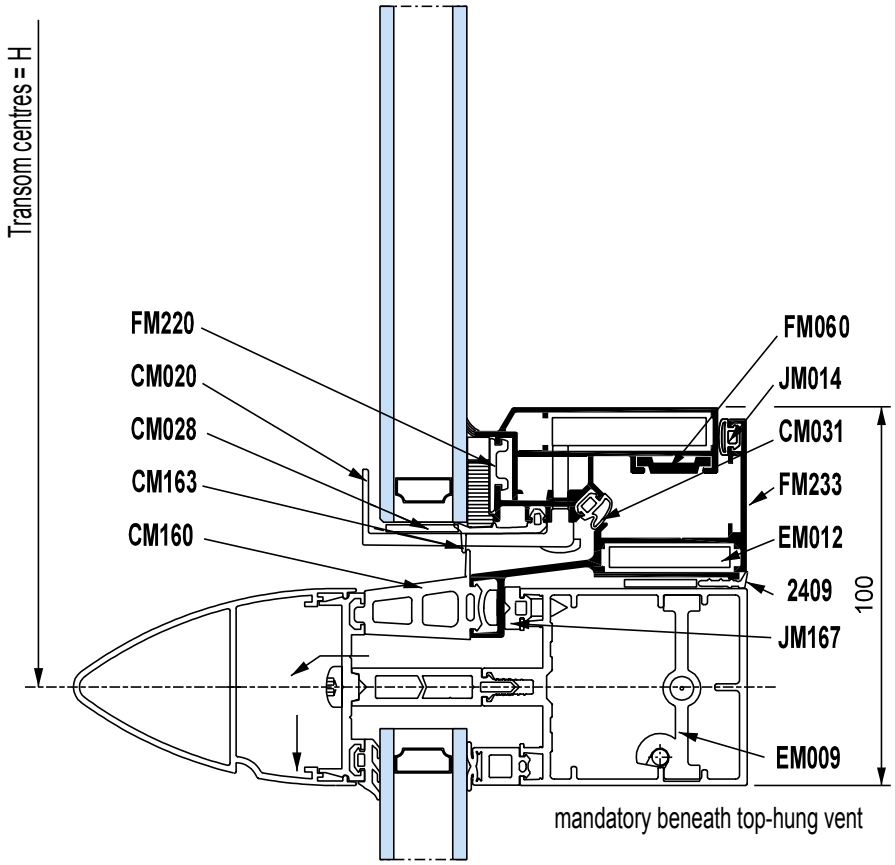
geffc076

TECHNAL®

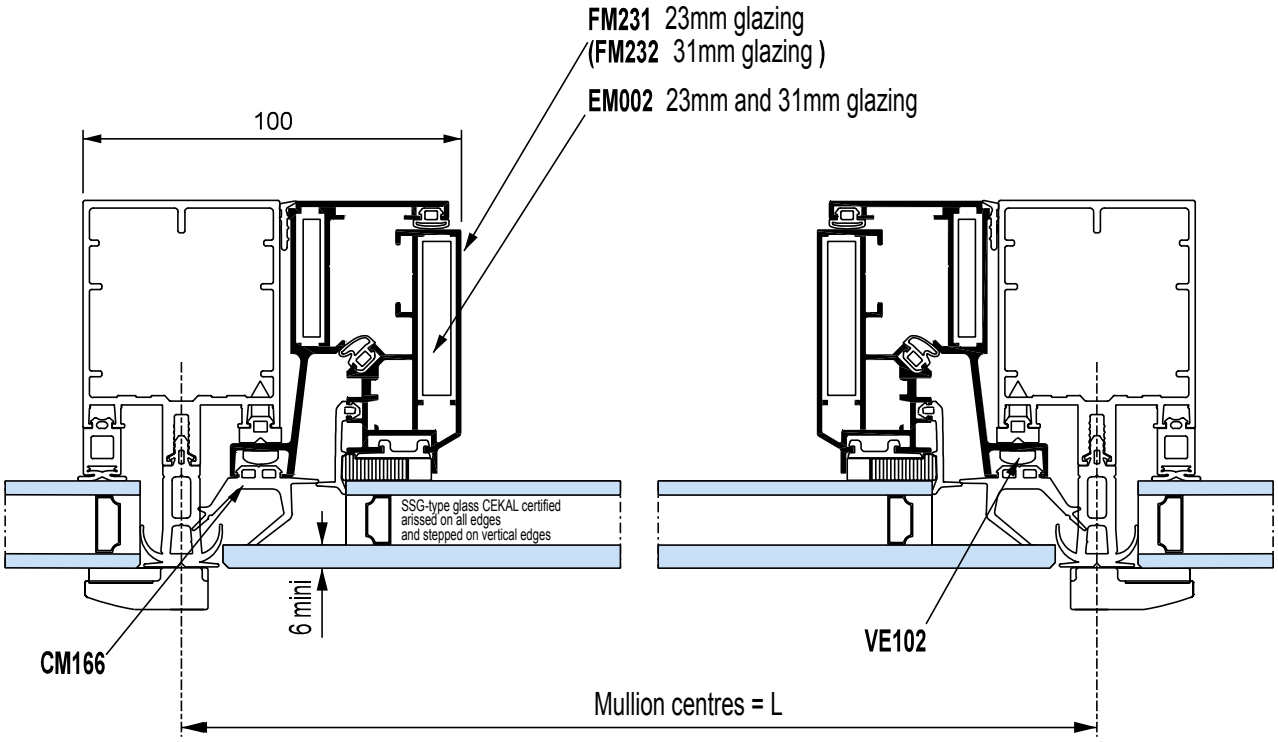
Applications

Horizontal line effect top-hung





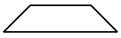
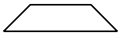
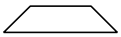
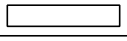
Glazing dimensions
Height = H-88
Internal glazing: Length = L-87
External glazing: Length = L-22



geffc079

VENT PROFILES

cutting allowance = 0.5mm

Reference		Preparation	Quantity	Cutting formula		
FM233	Fixed frame		2 2	W - 26 H - 26		
FM231 FM 232	Vent glazing 23mm Vent glazing 31mm		2 2	W - 87 H - 87	Vent + thermal break	W - 87 H - 87
FM220	Bonding profile		2 2	W - 92 H - 92		
FM060	Espagnolette rod		1	See hardware		

VENT WEATHERING PROFILES

Reference		Quantity and dimensions
JM014	Top-hung rebate gasket	2W/ 2 H
CM160	Top-hung rebate gasket	2W/ 2 H
CM166	Top-hung vent external gasket	2 H
JM167	Outer frame top-hung external gasket	2W/ 2 H
2409	Top-hung outer frame finishing gasket	2W/ 2 H
CM031	Internal weather gasket	1 (4 angles 1x1m)
CM163	Corner gasket for top-hung grid effect	1 (4 angles 1x1m)

GRID ACCESSORIES

EM009	2	Anti Rotation Spigot (mandatory with top-hung)

VENT ACCESSORIES

Reference	Quantity	Description
EM002	4	Corner cleat 10 x 43
EM012	4	Corner cleat 7.5 x 34
CM028	2 per frame	SSG Glazing wedge
CM020	1	Top-hung security part
VE102	4 / m	CBLX screw ST 4.8 x 22 C

See hardware

VENT TOOLS

Reference	Description
OM009	Drill jig for top-hung 45 vent frame friction stays
OM112	Drill jig for top-hung outer frame friction stays
OM065	Drill jig for keeps and locking wedges
OM119	Freestanding tool for vent machining
OM120	Freestanding tool for vent machining
OM113	Drill jig for top-hung security plates
OM066	Set of cutting wedges
OM023	Pair of gasket scissors

For grid, caps, and pressure plates, see the HORIZONTAL LINE EFFECT FIXED FRAMES section

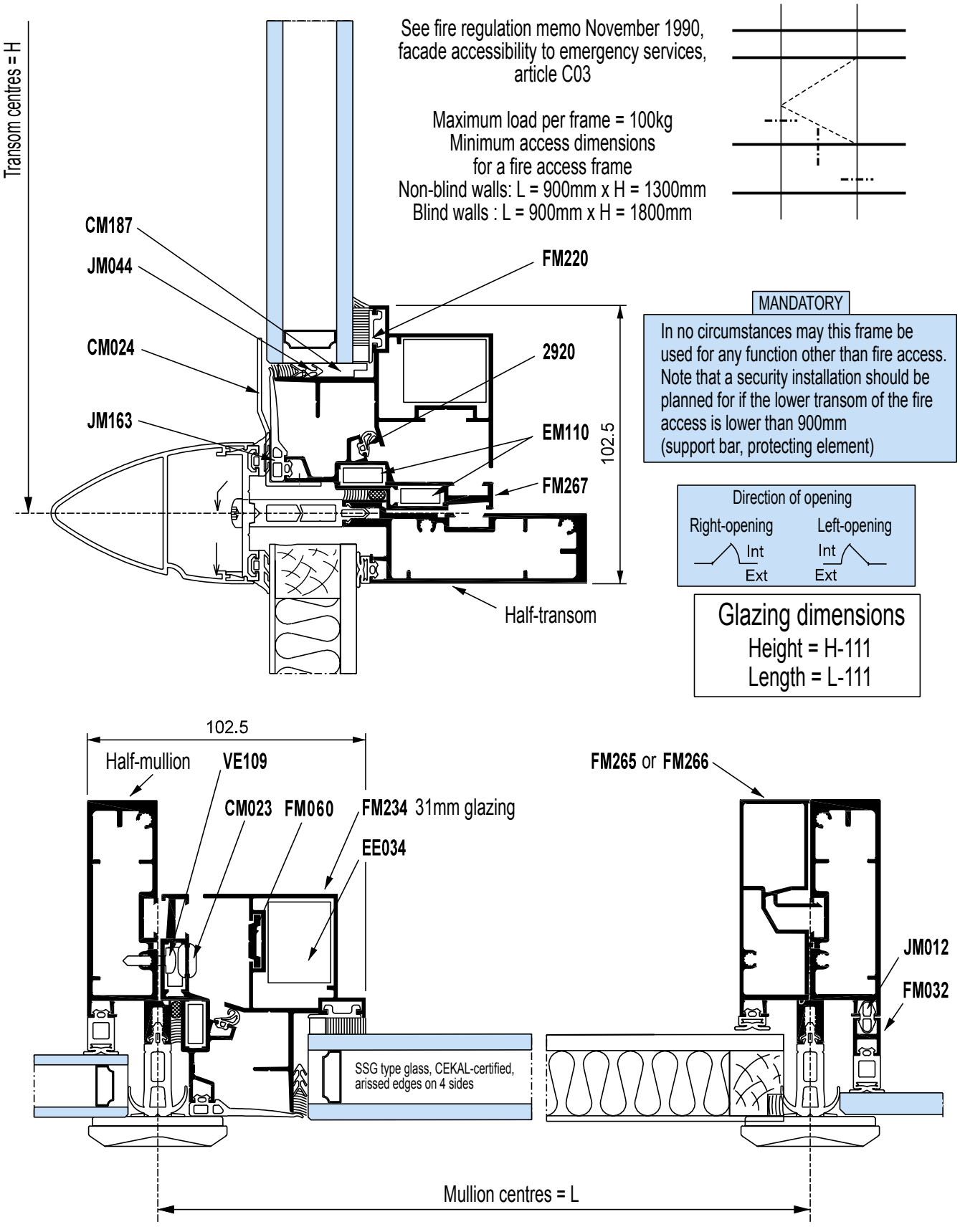
See fabrication catalogue for machining

geffc080

TECHNAL®

Applications

Horizontal line effect fire access



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GRID PROFILES

cutting allowance = 0.5mm

Reference	Preparation	Quantity	Cutting formula
Half-mullion as per inertia		As per grid	H as per grid
Half-transom as per inertia		As per grid	L
FM265 or FM266 Groove section restoration		As per grid	H - 52
Transom between fixed frames according to inertia		As per grid	L or L - 52
FM032 Glazing bead		As per infill	H - 30 L - 52

VENT PROFILES

cutting allowance = 0.5mm

Reference	Preparation	Quantity	Cutting formula		
FM267 Fixed frame		2 2	L - 2 H - 2		
FM234 Vent glazing 31mm		2 2	L - 34 H - 34	Vent + thermal break	L - 34 H - 34
FM220 Bonding profile		2 2	L - 111 H - 111		
FM060 Espagnolette rod		1	See hardware		

GRID WEATHERING PROFILES

Reference	Quantity and dimensions
Internal glazing gasket as per table	2 L / 2 H
JM012 Bead clip gasket for FM032	See glazing bead

VENT WEATHERING PROFILES

Reference		Quantity and dimensions
JM044	6mm Foam seal	2 L / 2 H
2920	Rebate gasket	2 L / 2 H
JM163	Fire access external gasket	2 L / 2 H

GRID ACCESSORIES

Reference	Quantity	Description
EM107	2 per half-trans.	Connector for FM263 FM264
EM108	2 per half-trans.	Connector for FM262
VE116	2 per half-trans.	CBLX screw ST 4.8 x 32 C

Assembly variant 1/2 trans. 80/100/140 on 1/2 mull.

VE116	4 per half-trans.	CBLX screw ST 4.8 x 32 C

Assembly: face mounting, transom on rebate

EM070	2 per trans.	Face mounting junction
VE116	2 per trans.	CBLX screw ST 4.8 x 32 C
VM034	4 per trans.	FX screw ST 4.8 x 19 C
EM009	2 per trans.	Anti-rotation spigot as per usage charts

Assembly: side mounting, transom on rebate

Connector as per trans.	2 per trans.	Connector
CM014	2 per trans.	Connector plug

VENT ACCESSORIES

Reference	Quantity	Description
EE034	4	Corner cleat 25 x 32.2
EM110	8	Corner cleat 7.5 x 16.5
CM187	2 per frame	Glazing wedge for edged vent
CM024	1	Fire access safety part
VE109	4 / m	CBLX self-tapping screw ST 4.8 x 16 footprint 20
CM023	4 / m	Finishing plug

See hardware section

VENT TOOLS

Reference	Description
OM021	Stepped drill bit Ø 10 and Ø 5
OM066	Set of cutting wedges

GRID TOOLS

Reference	Description
OM100	Tool for EM070 connector
OM006	Drill jig for BG side mounting connector
OM004	Template for side mounting
OM023	Pair of gasket scissors
OM042	Gasket roller
W150	Butyl cartridge, black

For caps and pressure plates, see the HORIZONTAL LINE EFFECT FIXED FRAMES section

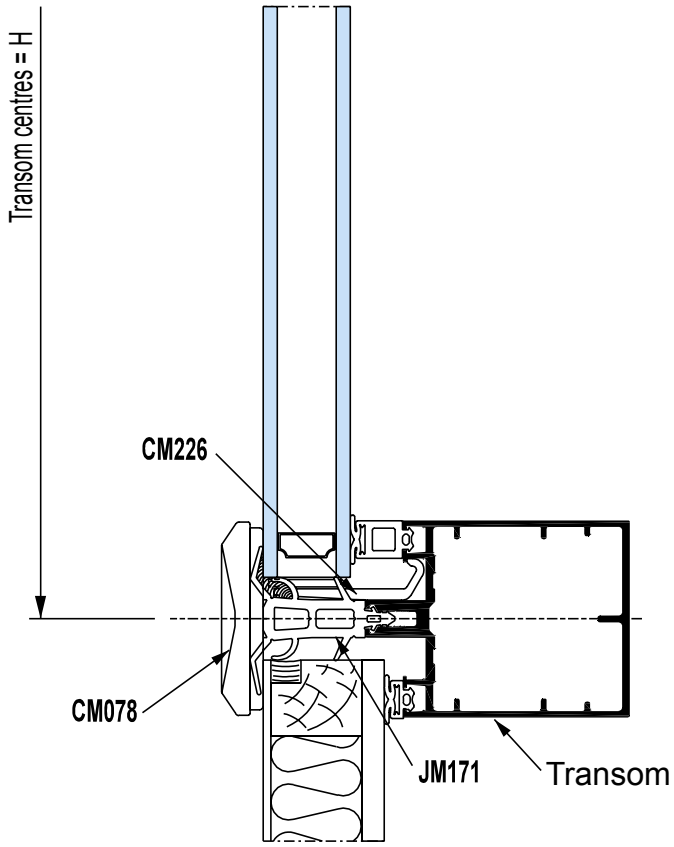
See fabrication catalogue for machining

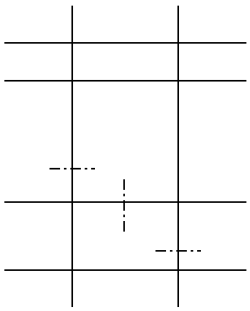
geffc084

TECHNAL®

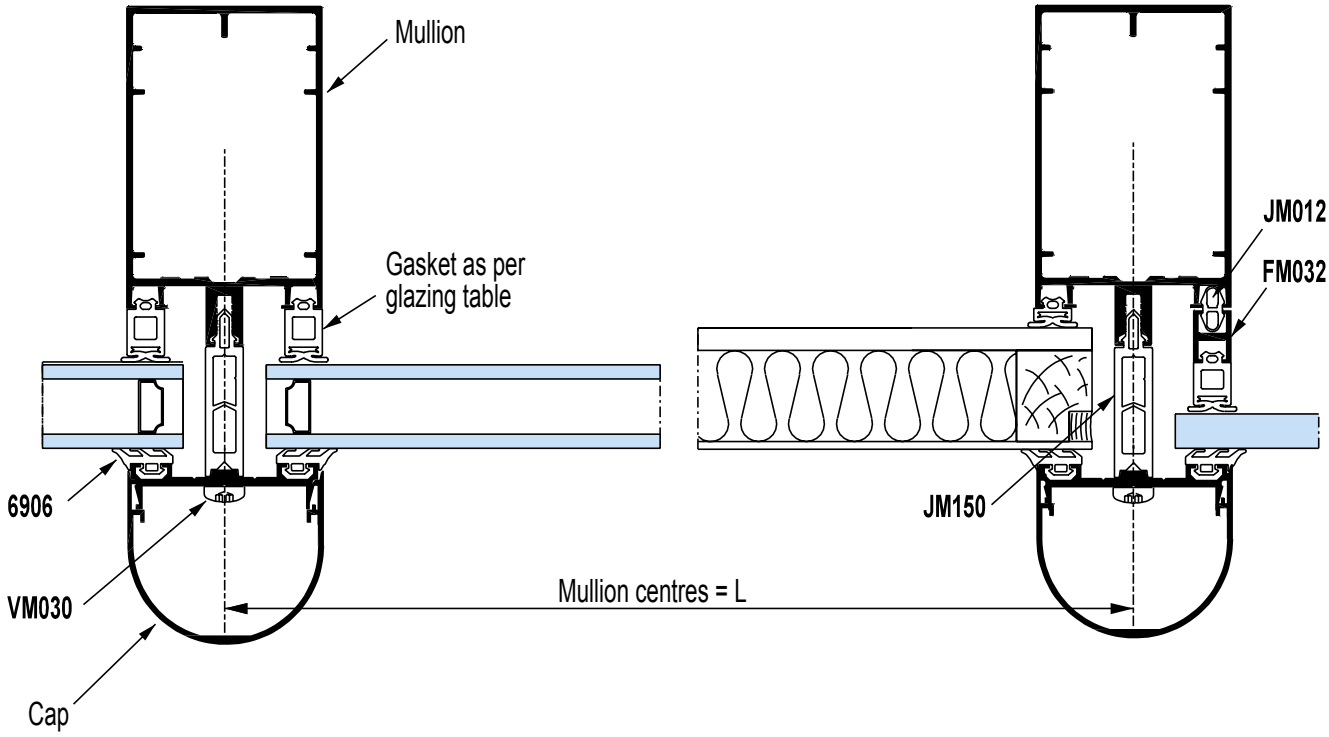
Applications

Vertical line effect fixed frame





Glazing dimensions
Height = H-22
Length = L-22



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PROFILES

cutting allowance = 0.5mm

Reference	Preparation	Quantity	Cutting formula
Mullion as per inertia		As per grid	H as per grid
Transom as per inertia		As per grid	L - 52
FM032 Glazing bead		As per infill	H - 30 W- 52
Transom cap		As per grid	L as per grid
FM221 Pressure plate		As per grid	L as per grid

WEATHERING PROFILES

Reference	Quantity and dimensions
Internal glazing gasket as per table	2L / 2 H
JM012 Bead clip gasket for FM032	See glazing bead
JM171 Horizontal line architectural façade mullion gasket	L -50 $^{+5}_{0}$
JM150 Spacer gasket for pressure plate	H as per grid
6906 4mm external glazing gasket	2L / 2 H

ACCESSORIES

FACE MOUNTING ASSEMBLY

Reference	Quantity	Description
EM070	2 per trans.	Face mounting junction
VE116	2 per trans.	CBLX screw ST 4.8 x 32 C
VM034	4 per trans.	FX screw ST 4.8 x 19 C
EM009	2 per trans.	Anti Rotation Spigot (see p.20)

SIDE MOUNTING ASSEMBLY

Connector as per trans.	2 per trans.	Connector
CM014	2 per trans.	Connector plug for side mounting

CM226	2 per trans.in accord -ance with DTU 39	Glazing block support
CM140	1 per assemb.	Horizontal line connector plug
VM030	5 / m	CBLX type 2 screw ST 5.5 x 50 C
CM078	0 or 1	Pressure plate for horizontal line fixed light
EM143	1 per cap	Pop rivet for cap fixing

TOOLS

MACHINING FOR FRONT MOUNTING

Reference	Description
OM100	Tool for EM070 connector

MACHINING FOR SIDE MOUNTING

OM006	Drill jig for BG side mounting connector
OM004	Template for side mounting

OM023	Pair of gasket scissors
OM042	Gasket roller
W150	Butyl cartridge, black

OPTION

OM111	Tool for JM150 machining

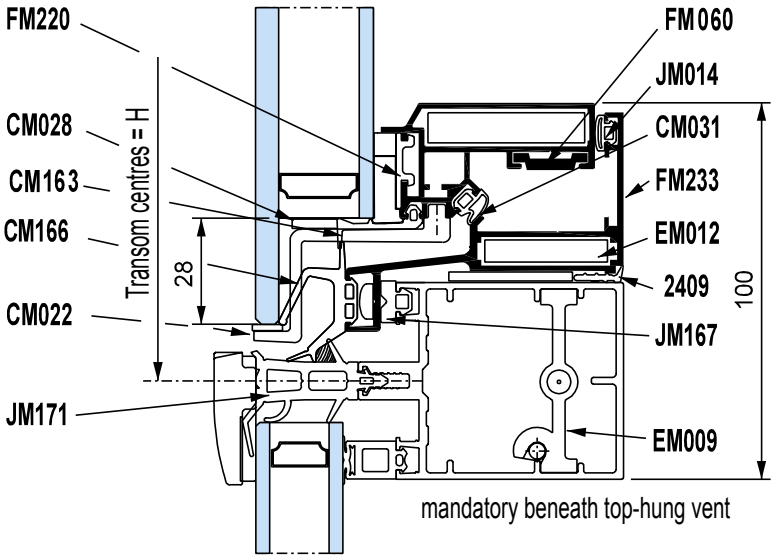
See fabrication catalogue for machining

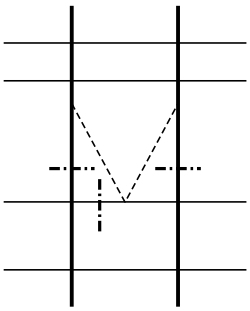
geffc088

TECHNAL®

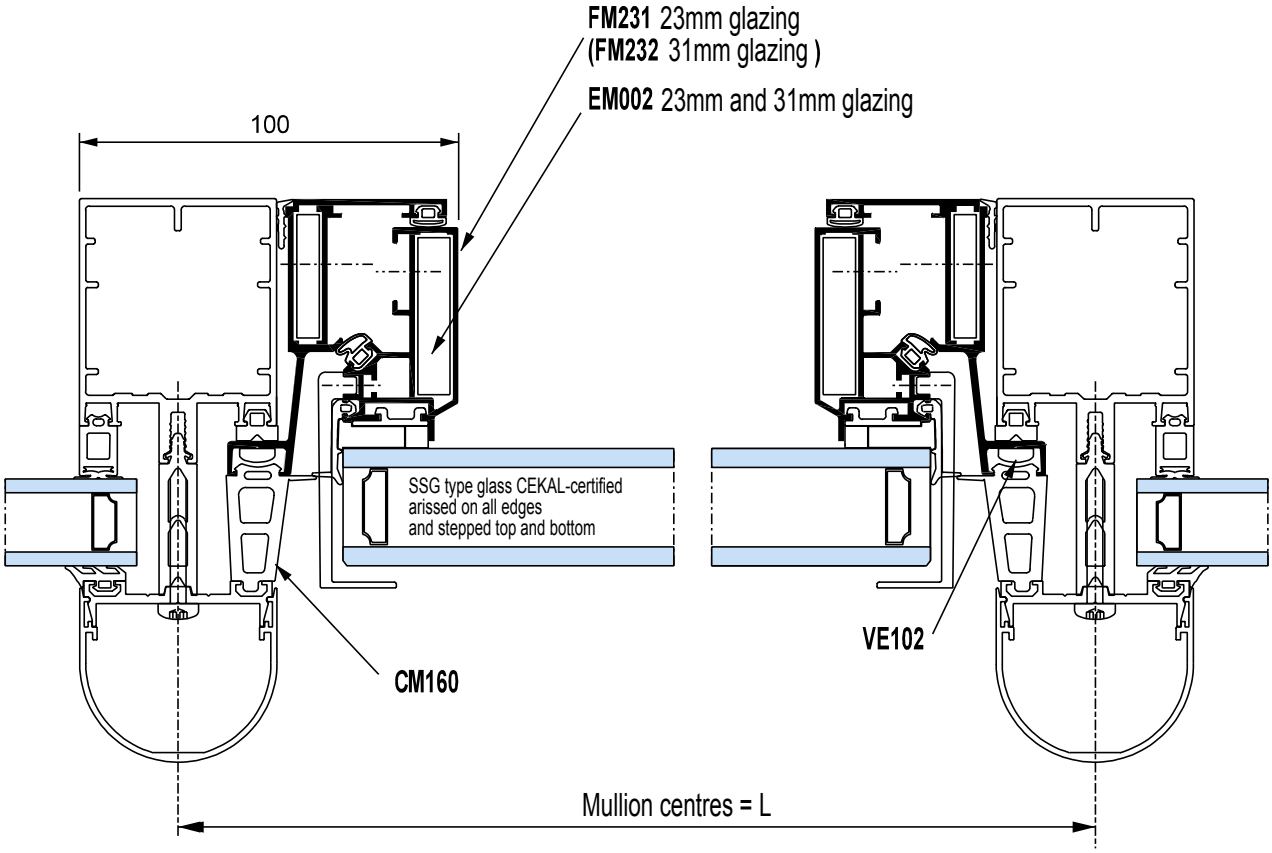
Applications

Vertical line effect top-hung





Glazing dimensions
External glazing: Height = H-30
Internal glazing: Height = H-87
Length = L-82



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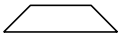
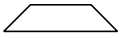
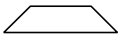
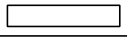
VENT PROFILES

cutting allowance = 0.5mm

Reference		Preparation	Quantity	Cutting formula		
FM233	Fixed frame		2 2	L - 26 H - 26		
FM231 FM 232	Vent glazing 23mm Vent glazing 31mm		2 2	L - 87 H - 87	Vent plus profile dimensions	L - 87 H - 87
FM220	Bonding profile		2 2	L - 92 H - 92		
FM060	Espagnolette rod		1	See hardware		

VENT WEATHERING PROFILES

Reference		Quantity and dimensions
JM014	Top-hung rebate gasket	2L / 2 H
CM160	Top-hung rebate gasket	2 H
CM166	Top-hung vent external gasket	2L
JM167	Outer frame top-hung external gasket	2L / 2 H
2409	Top-hung outer frame finishing gasket	2L / 2 H
CM031	Internal weather gasket	1 (4 angles 1x1m)
CM163	Corner gasket for top-hung grid effect	1 (4 angles 1x1m)

GRID ACCESSORIES

EM009	2	Anti Rotation Spigot (mandatory with top-hung)

VENT ACCESSORIES

Reference	Quantity	Description
EM002	4	Corner cleat 10 x 43
EM012	4	Corner cleat 7.5 x 34
CM028	2 per frame	SSG Glazing wedge
CM022	1	Vertical line Top-hung security part
VE102	4 / m	CBLX screw ST 4.8 x 22 C

See hardware

VENT TOOLS

Reference	Description
OM009	Drill jig for top-hung 45 vent frame friction stays
OM112	Drill jig for top-hung outer frame friction stays
OM065	Drill jig for keeps and locking wedges
OM119	Freestanding tool for vent machining
OM120	Freestanding tool for vent machining
OM113	Drill jig for top-hung security plates
OM066	Set of cutting wedges
OM023	Pair of gasket scissors

For grid, caps, and pressure plates, see the VERTICAL LINE EFFECT FIXED FRAMES section

See fabrication catalogue for machining

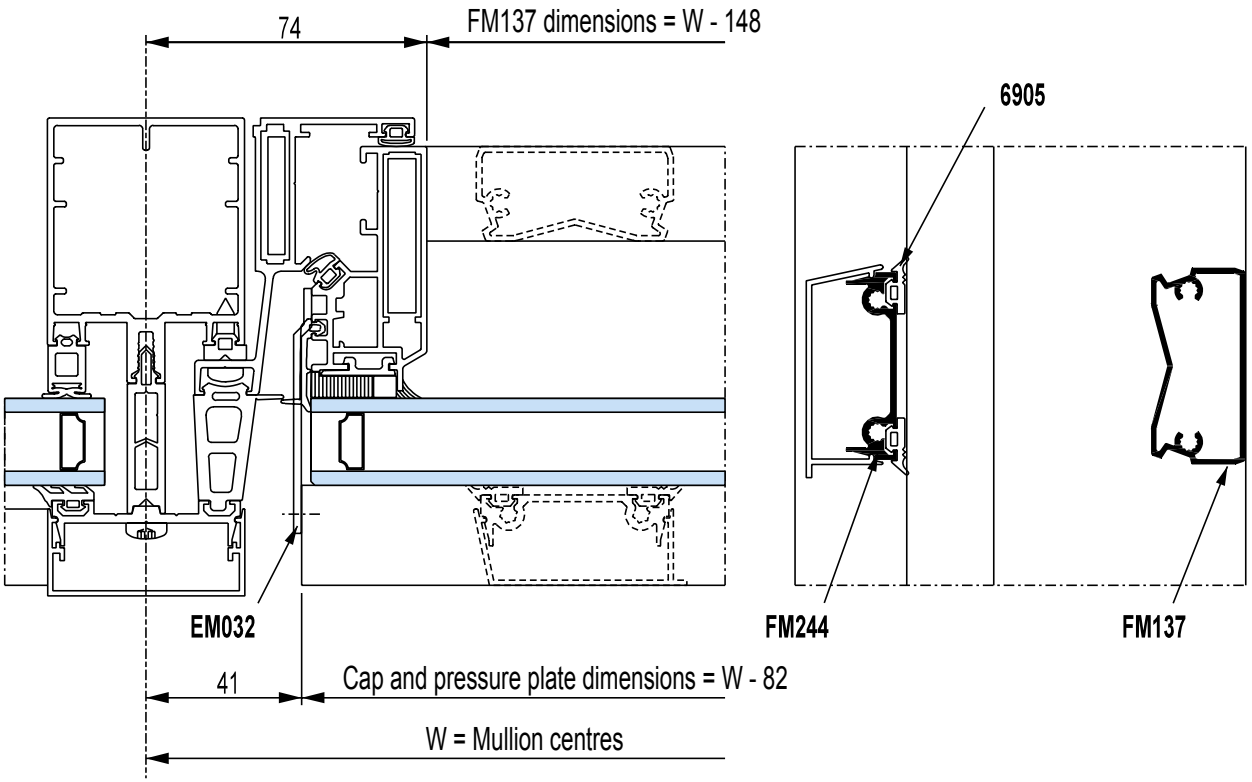
geffc092

TECHNAL®

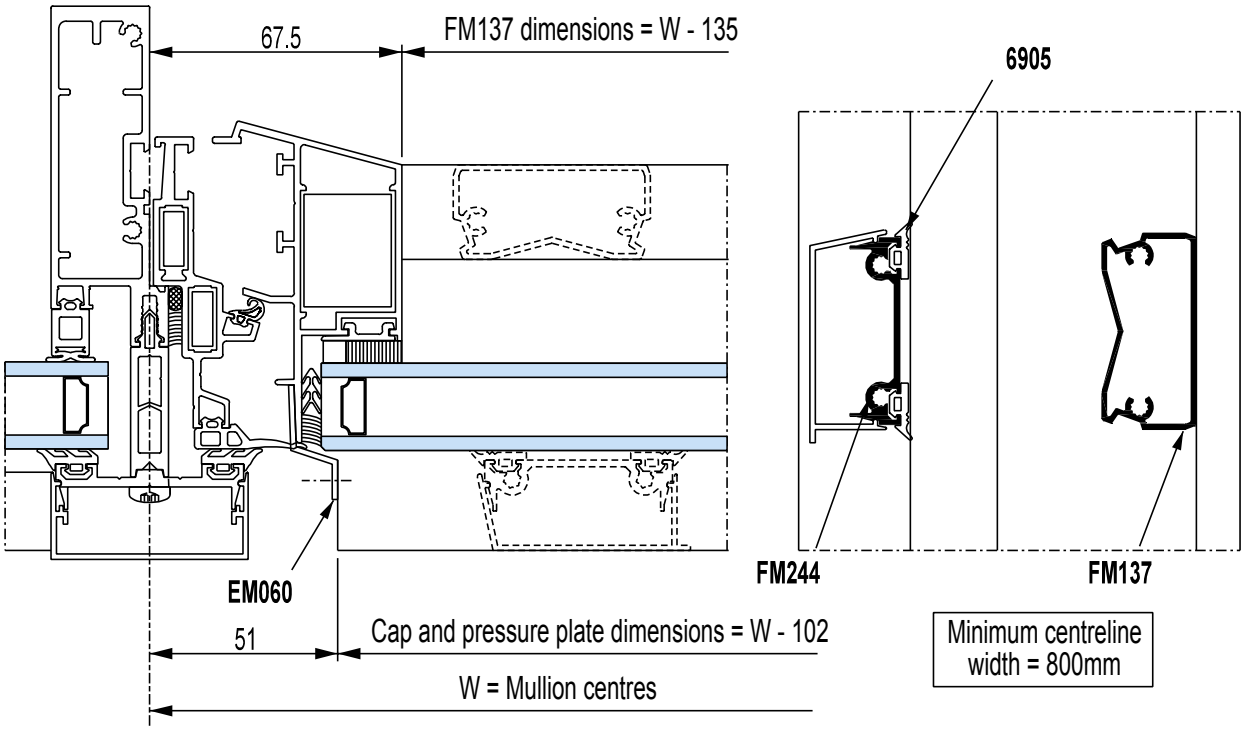
Options

Vent transoms

Grid effect top-hung



Grid effect tilt-and-turn, inward-opening, bottom-hung



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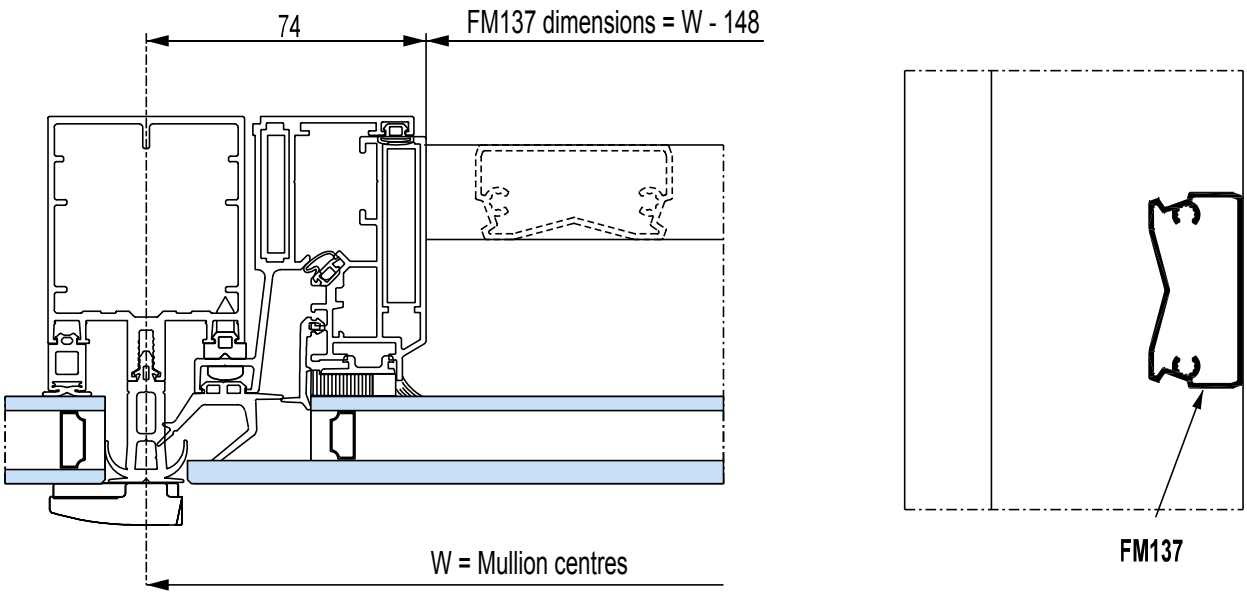
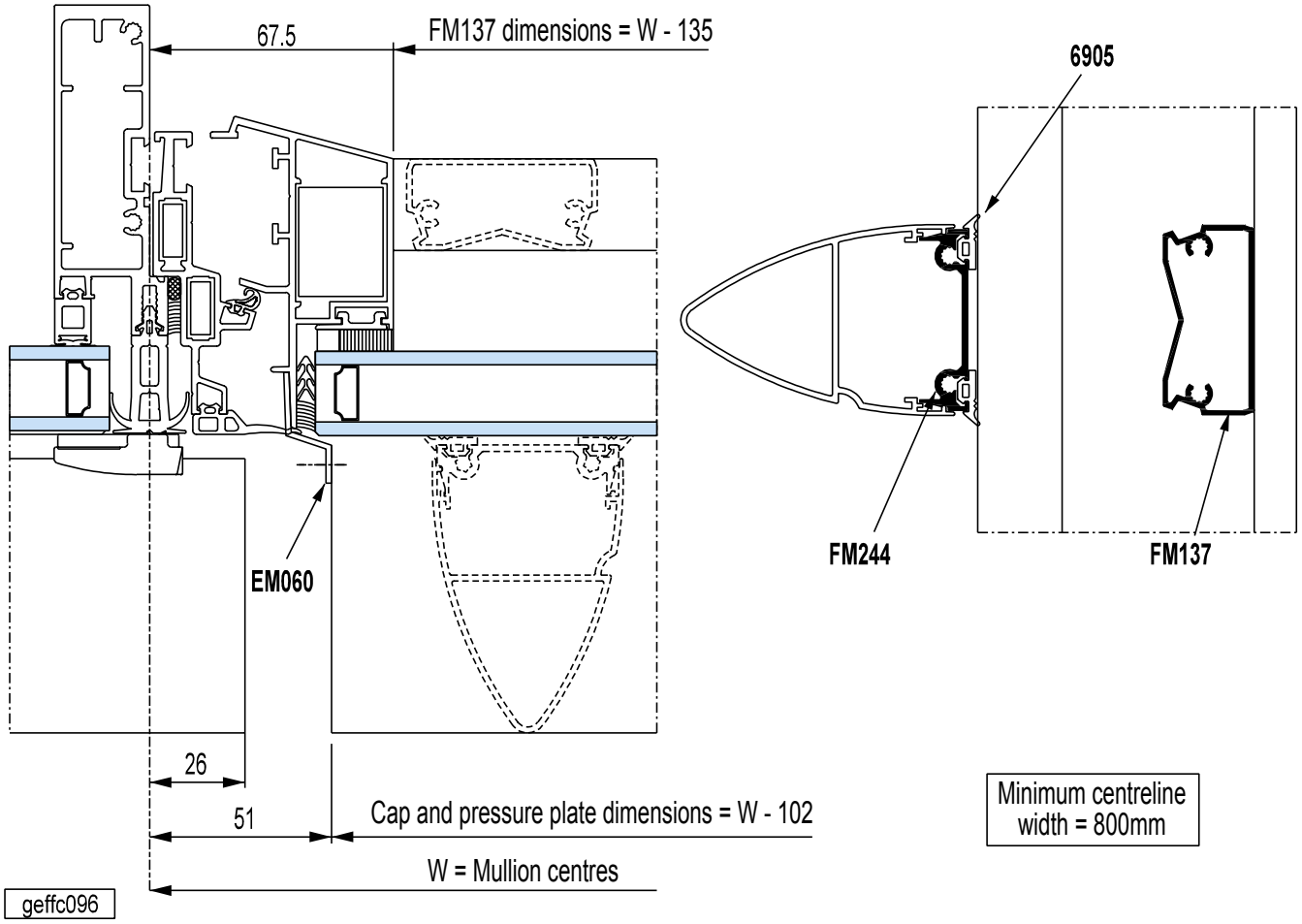
Horizontal line effect top-hung



External cap not possible

Horizontal line effect tilt-and-turn, inward-opening, bottom-hung

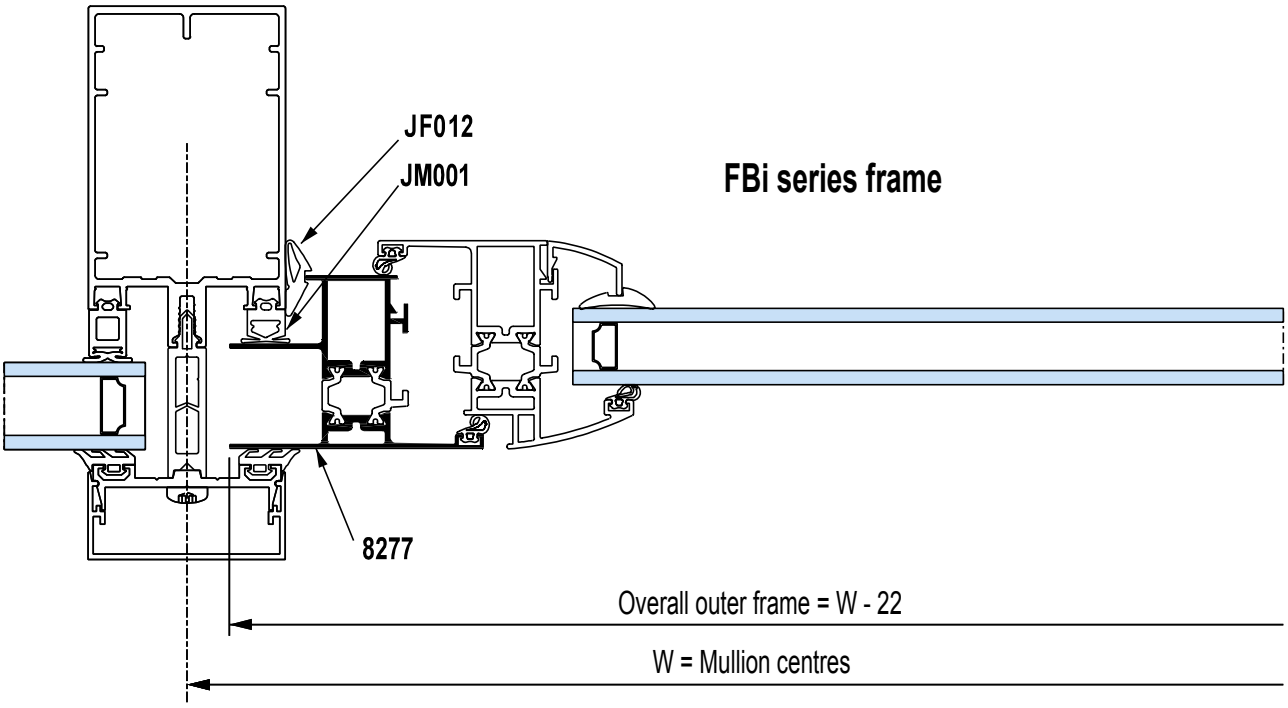


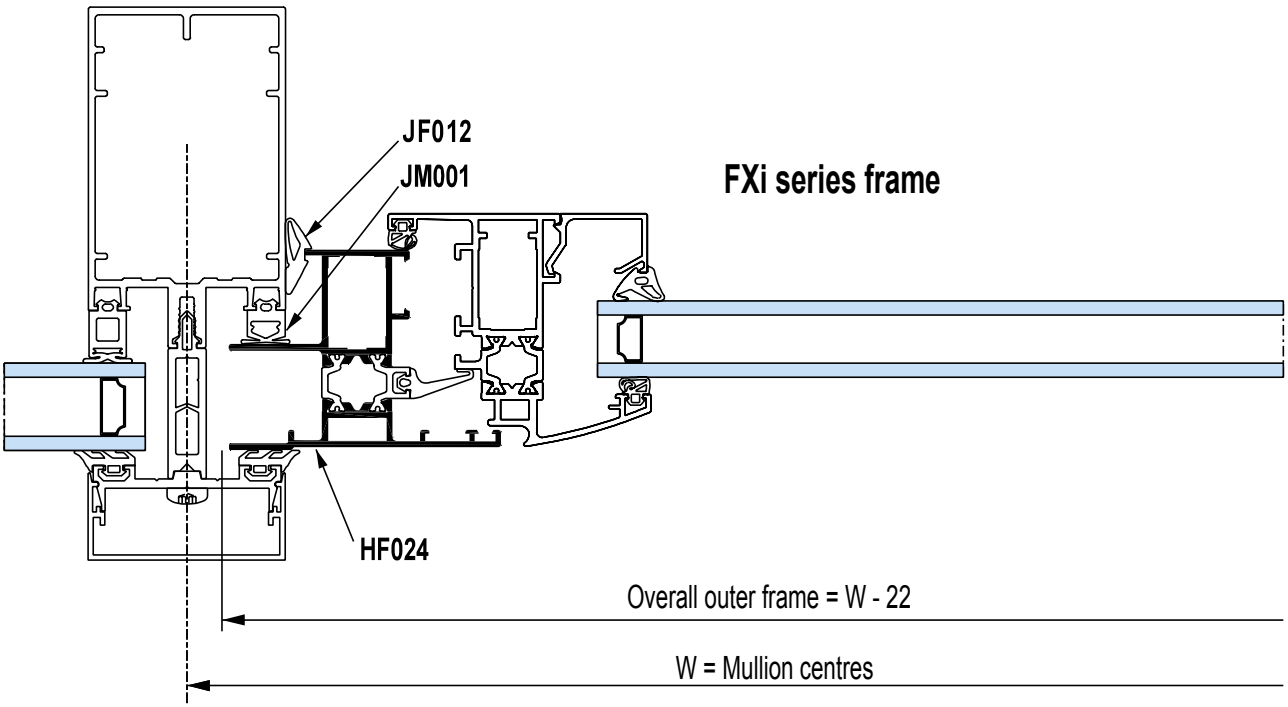
Minimum centreline width = 800mm

TECHNAL®

Options

Frame and door - subsequent mounting





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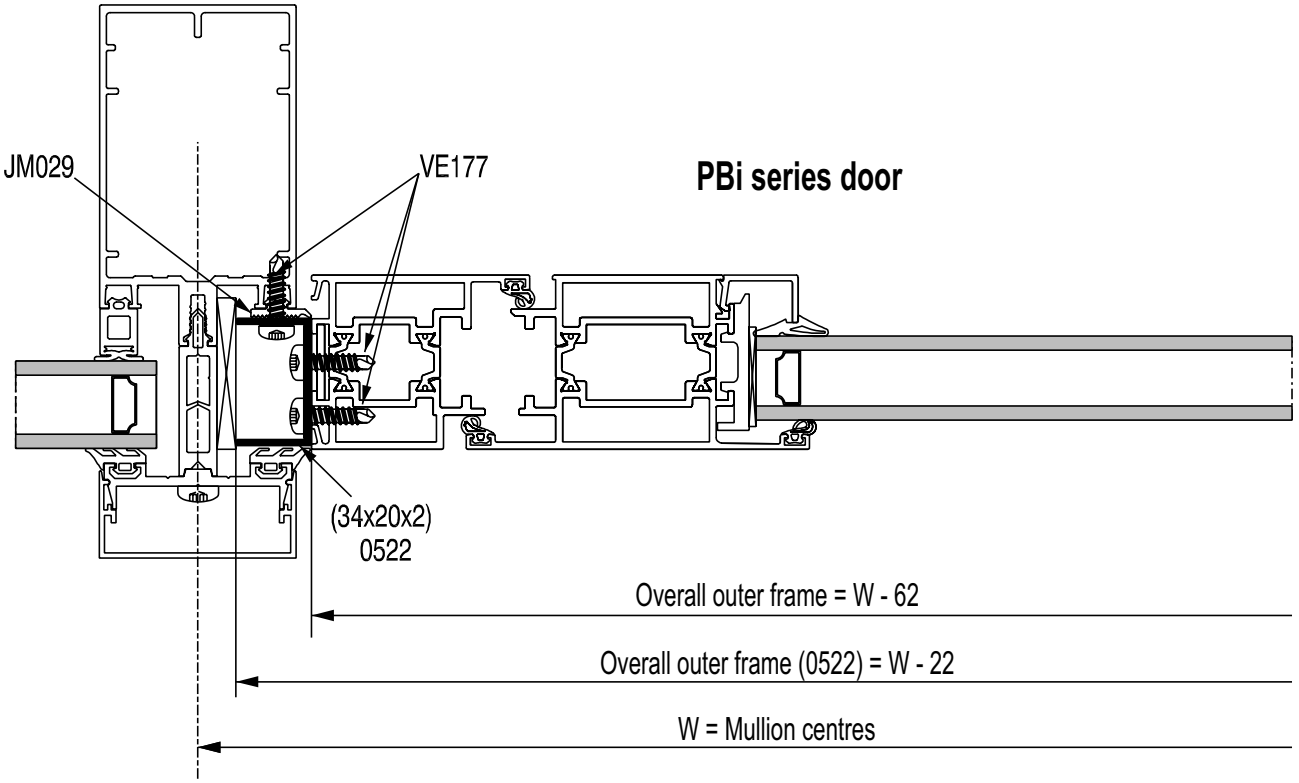
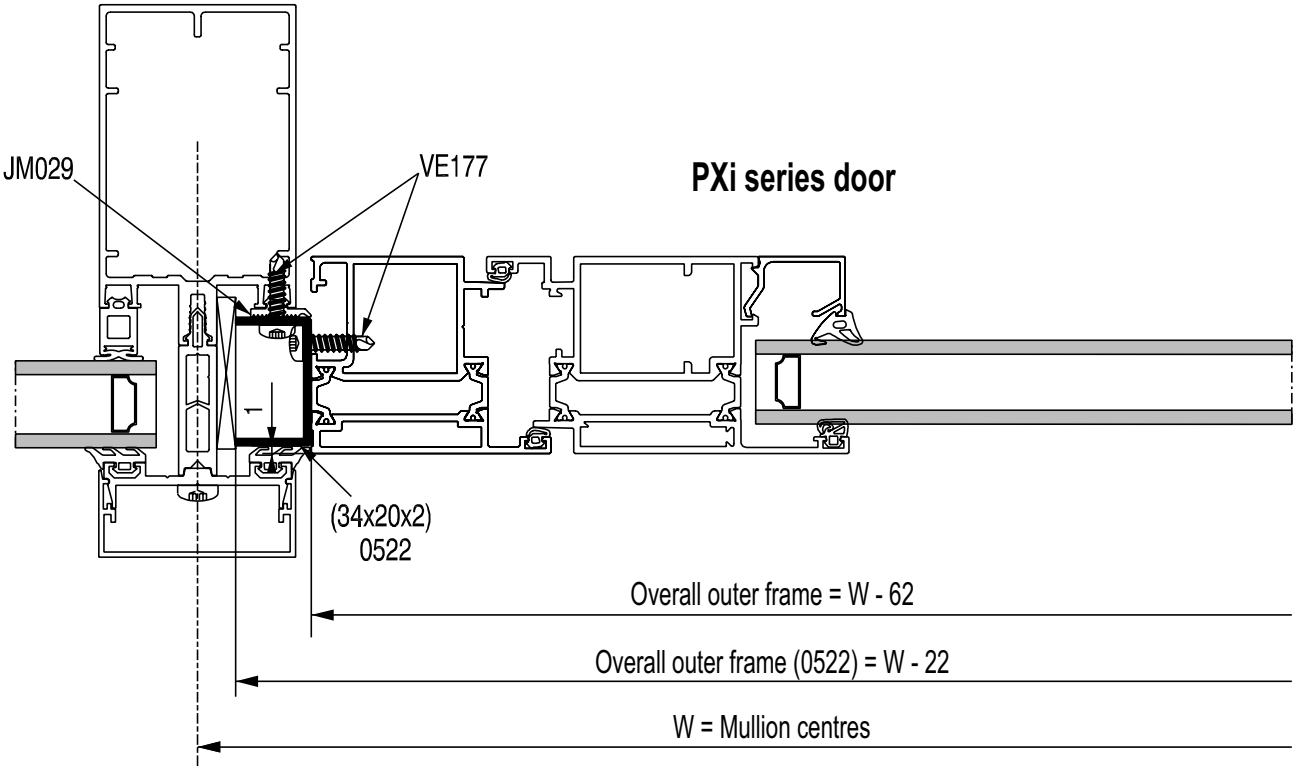

JM029
VE177
PBi series door
(34x20x2)
0522
Overall outer frame = W - 62
Overall outer frame (0522) = W - 22
W = Mullion centres


JM029
VE177
PXi series door
(34x20x2)
0522
Overall outer frame = W - 62
Overall outer frame (0522) = W - 22
W = Mullion centres

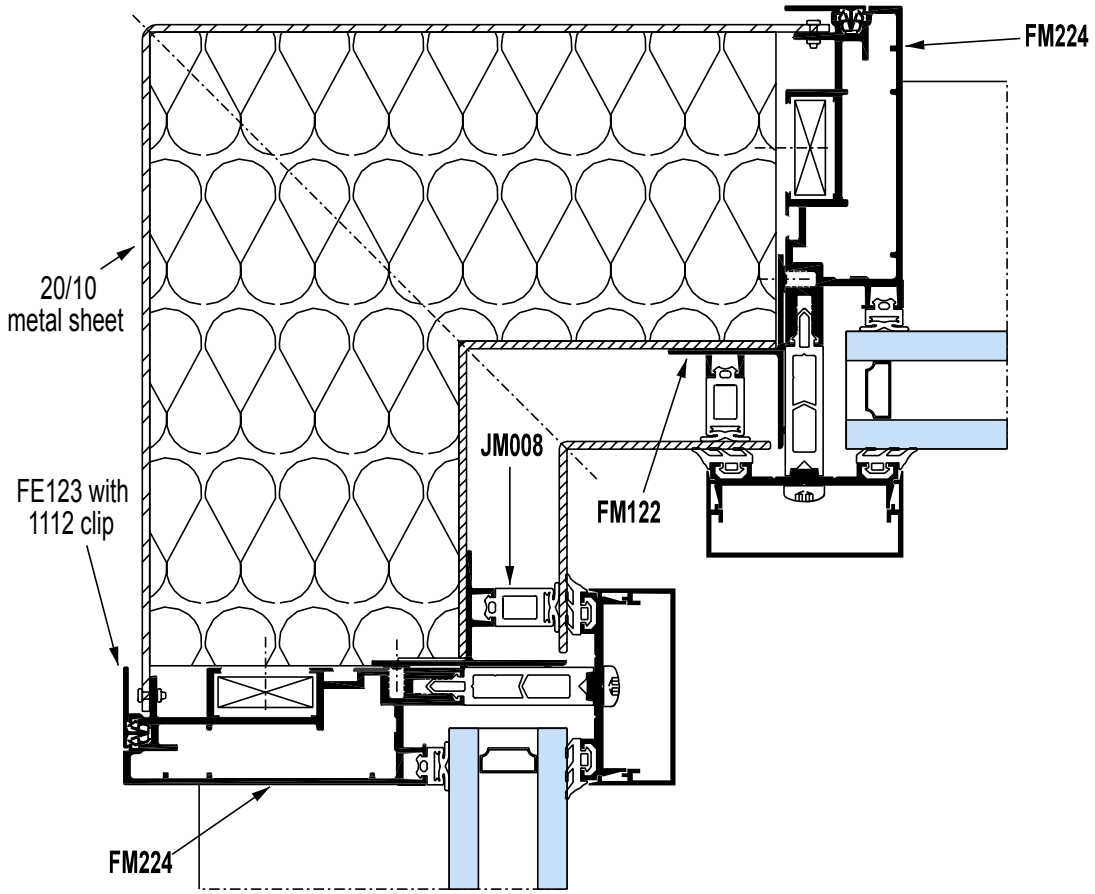
geffc098

TECHNAL®

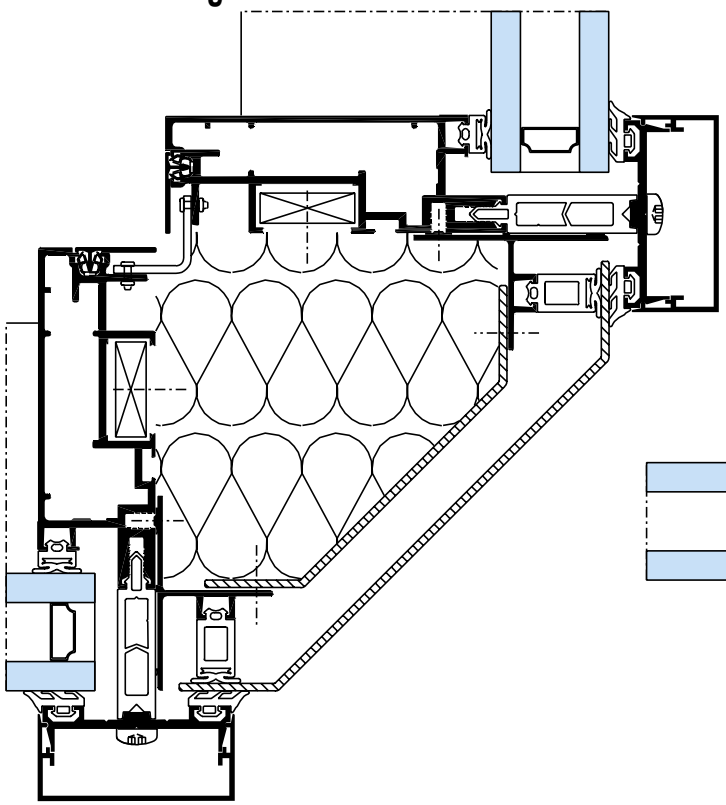
Options

90° convex and concave angles

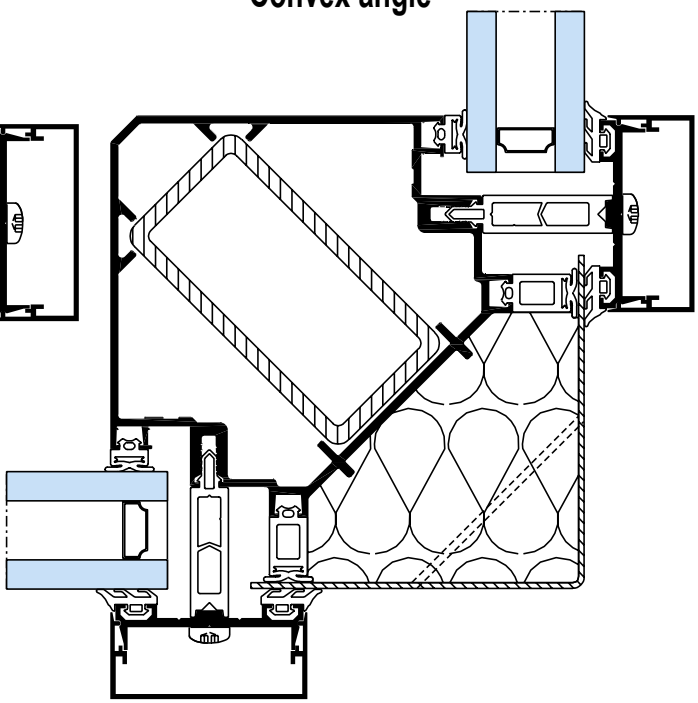
Concave angle



Convex angle



Convex angle



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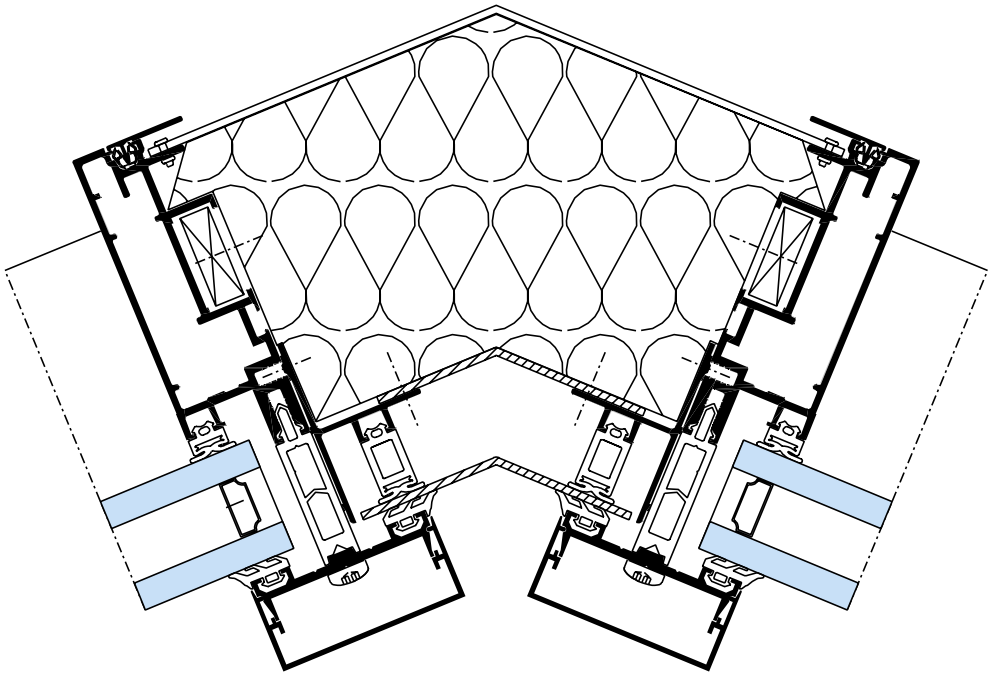
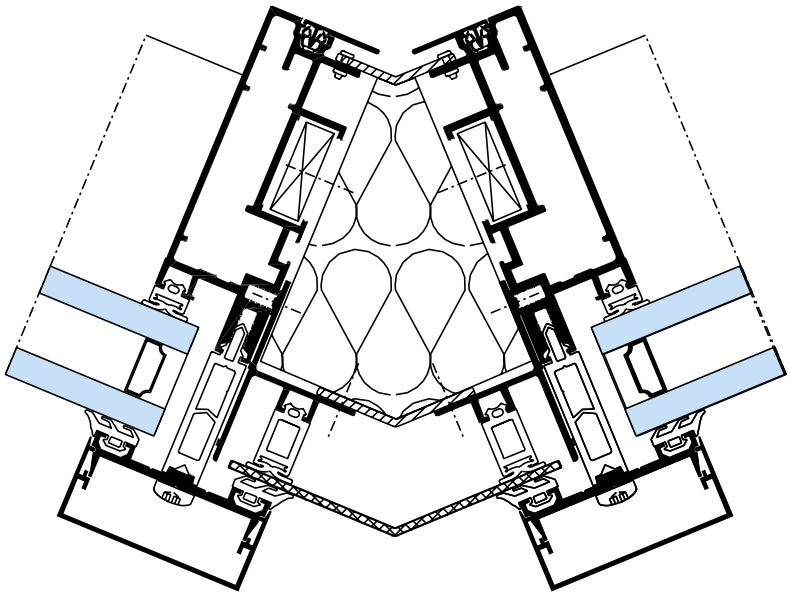
Options

135° convex and concave angles

Concave angle



Convex angle



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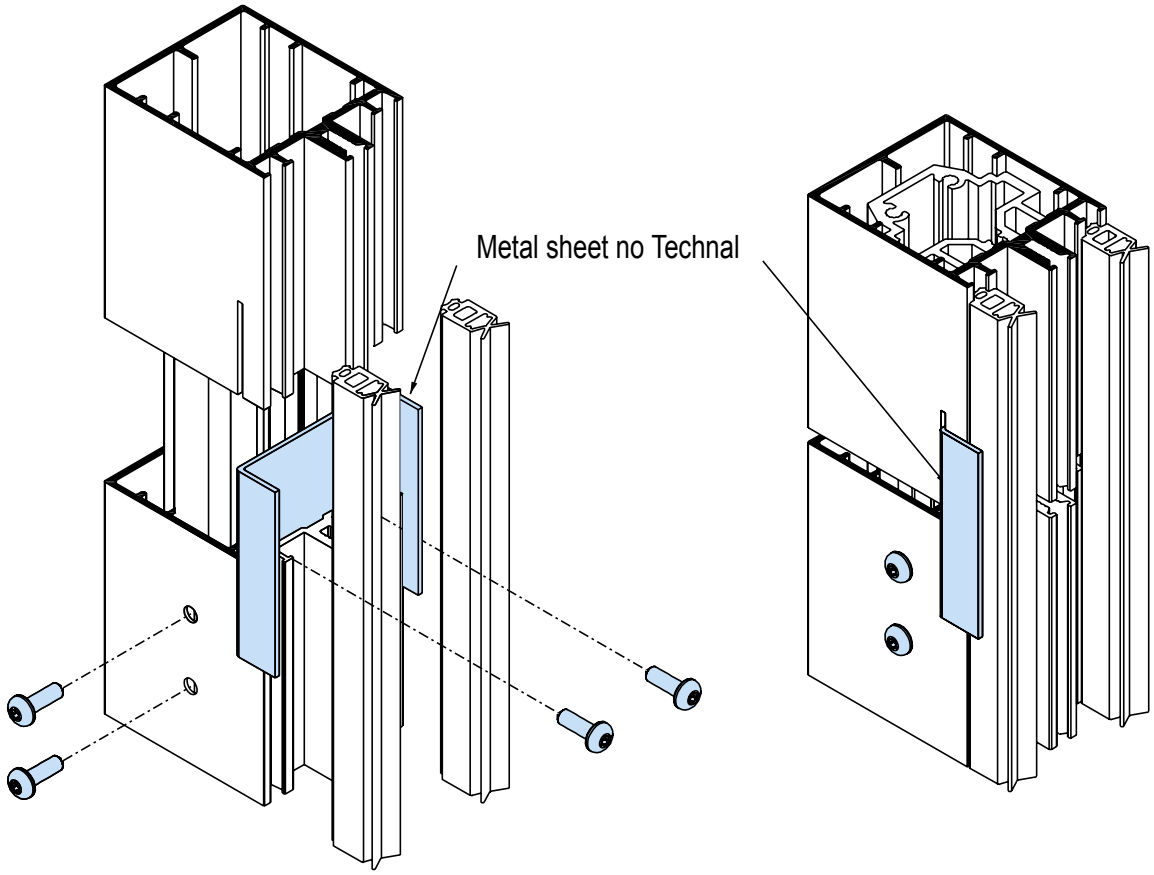
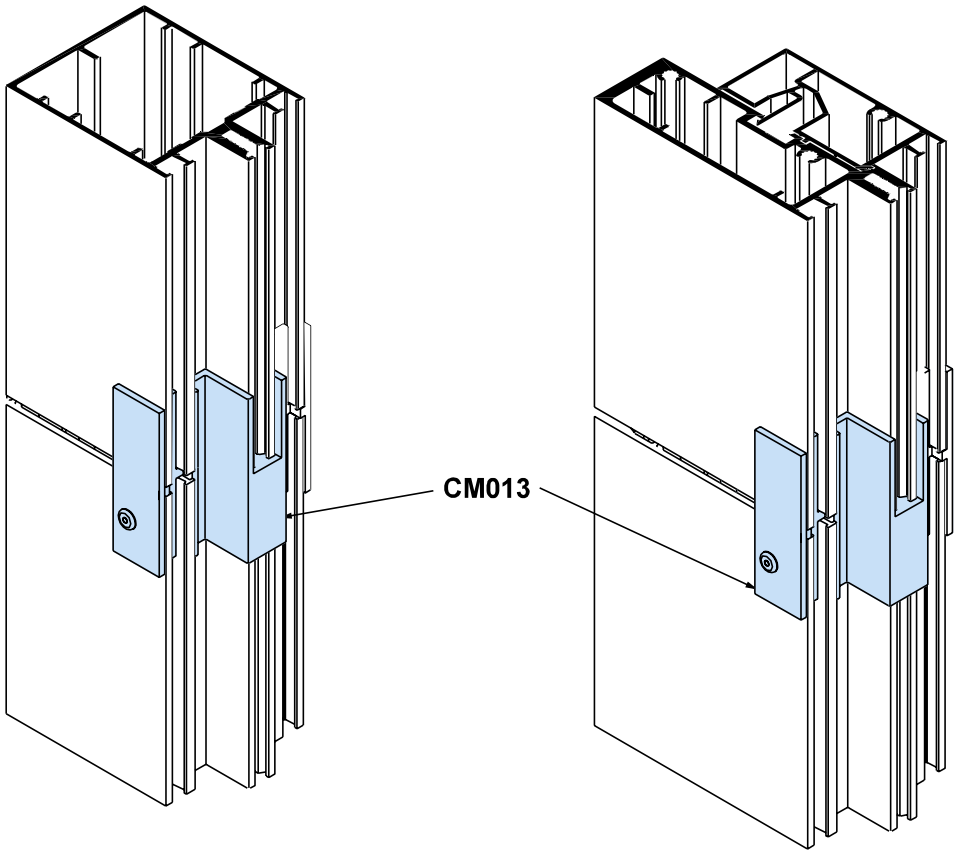
TECHNAL®

Options

Sleeving, mullion expansion



Sleeving, fixed mullions



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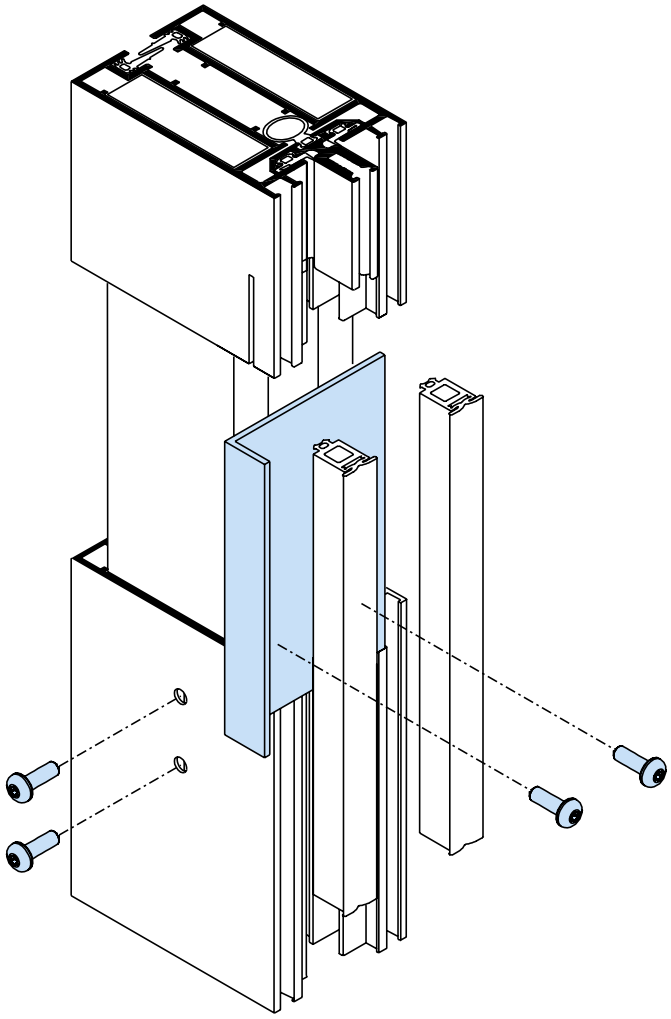
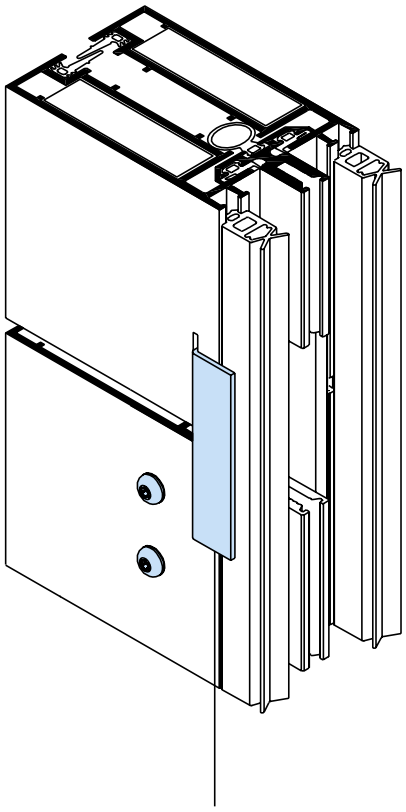
Options

Sleeving, vertical expansion





Metal sheet no Technal

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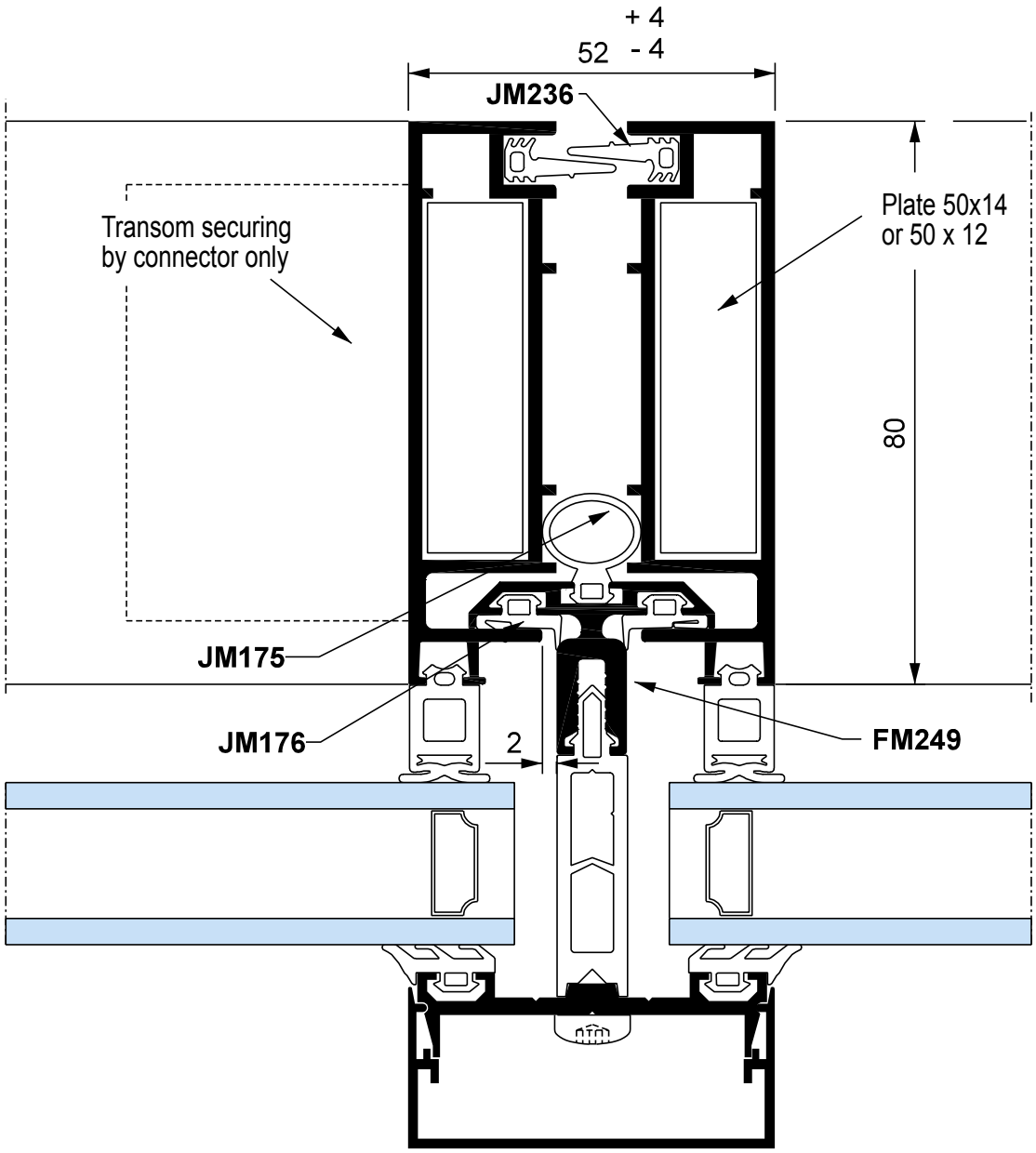
TECHNAL®

Options

Expansion mullion

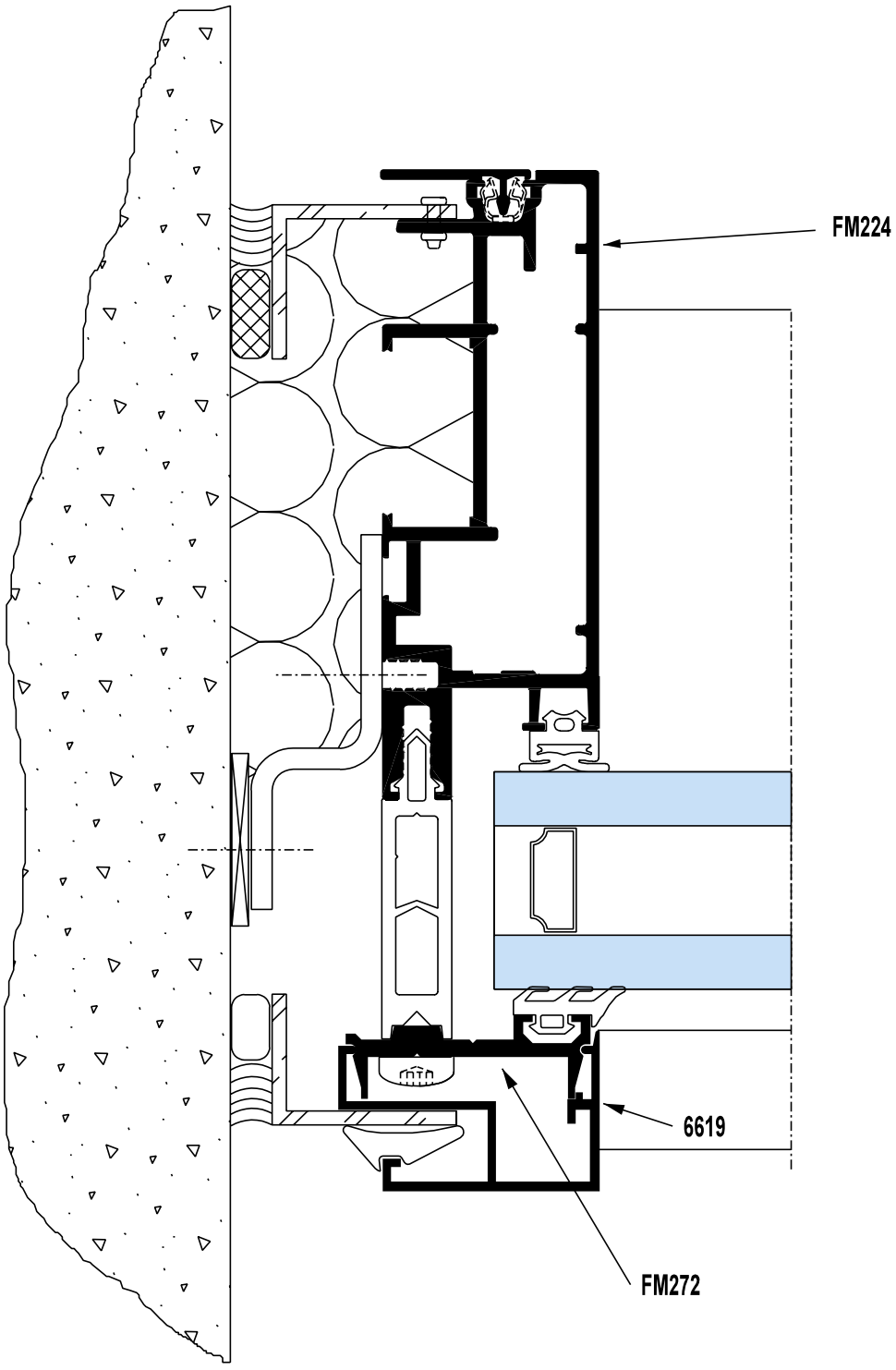


Scale: 1:1

geffc104

Installation examples

Fixing to structural walls



Scale: 1:1

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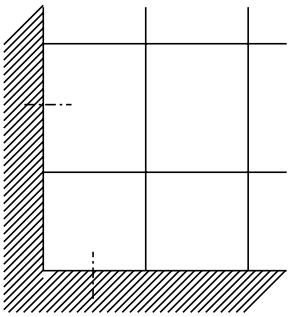
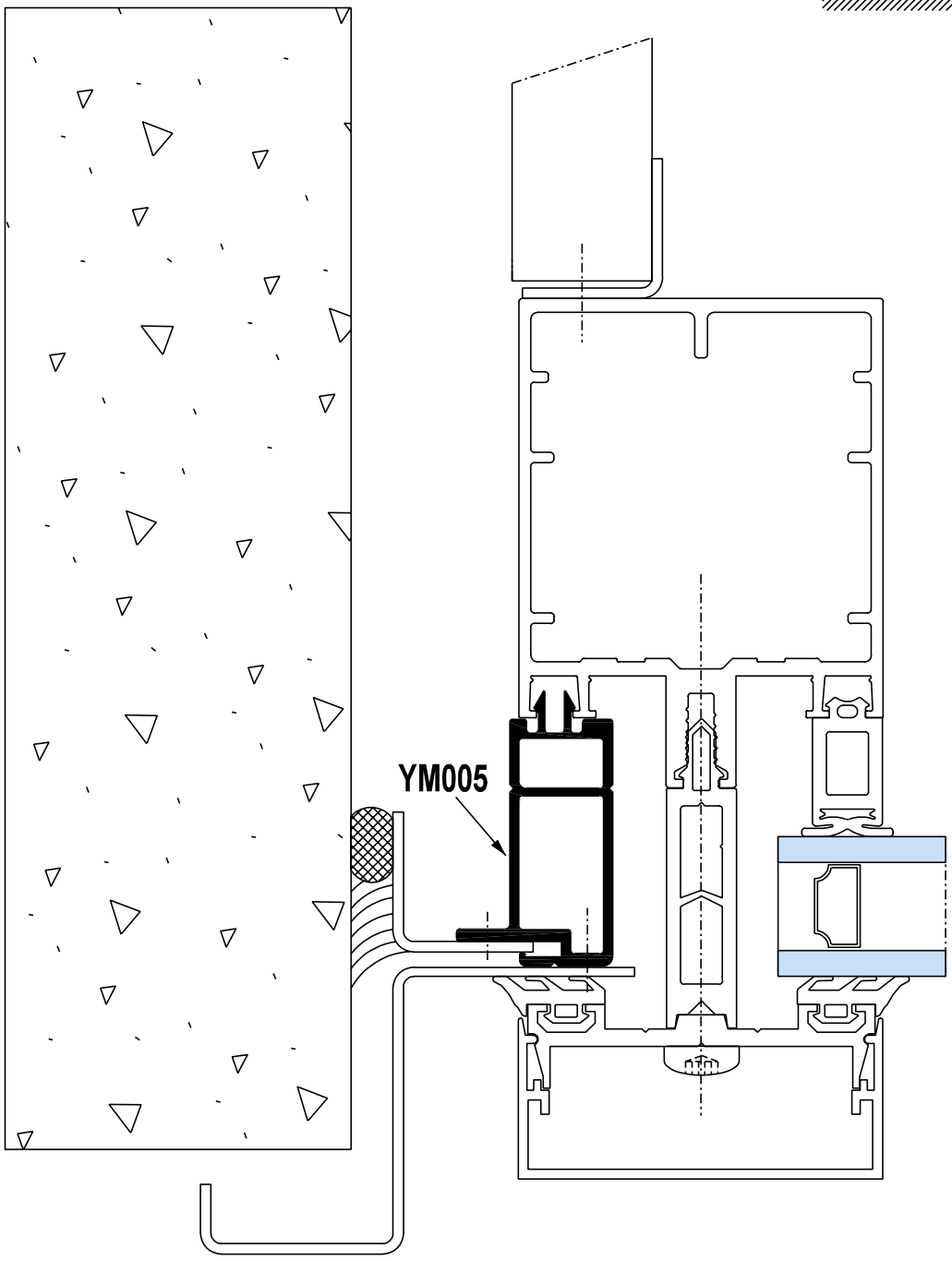
Installation examples

Fixing to masonry, grid effect

■ Horizontal cross section

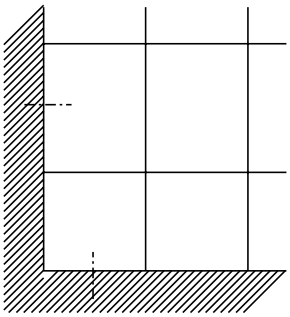


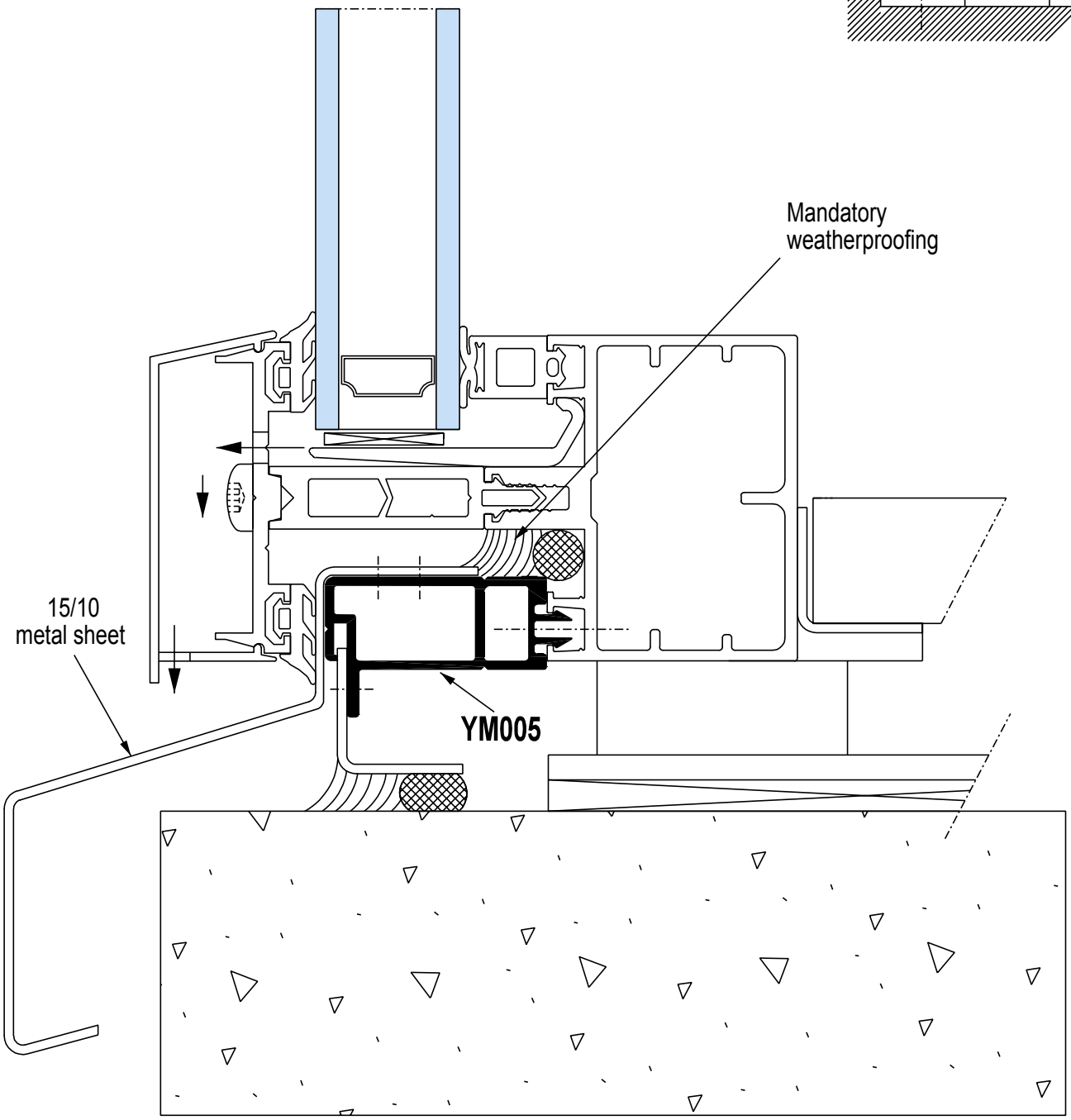


Scale: 1:1

geffc100

Vertical cross section





Scale: 1:1

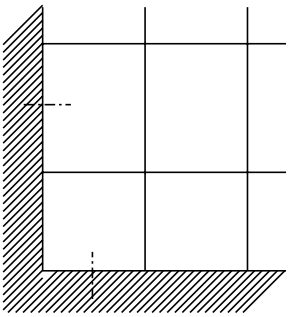
geffc099

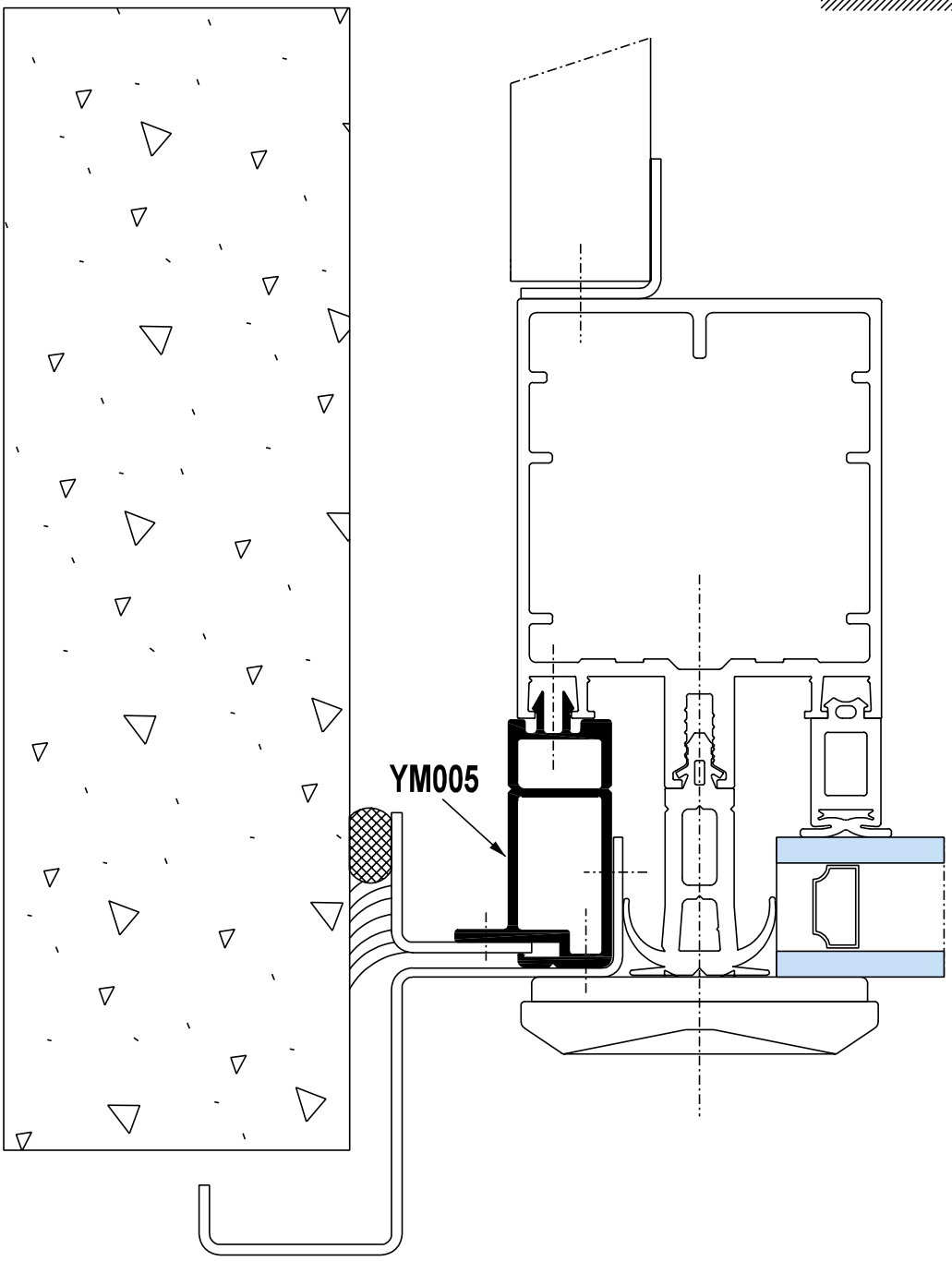
TECHNAL®

Installation examples

Fixing to masonry, horizontal line effect

■ Horizontal cross section

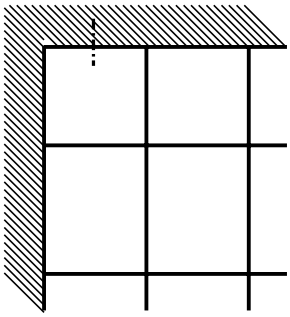


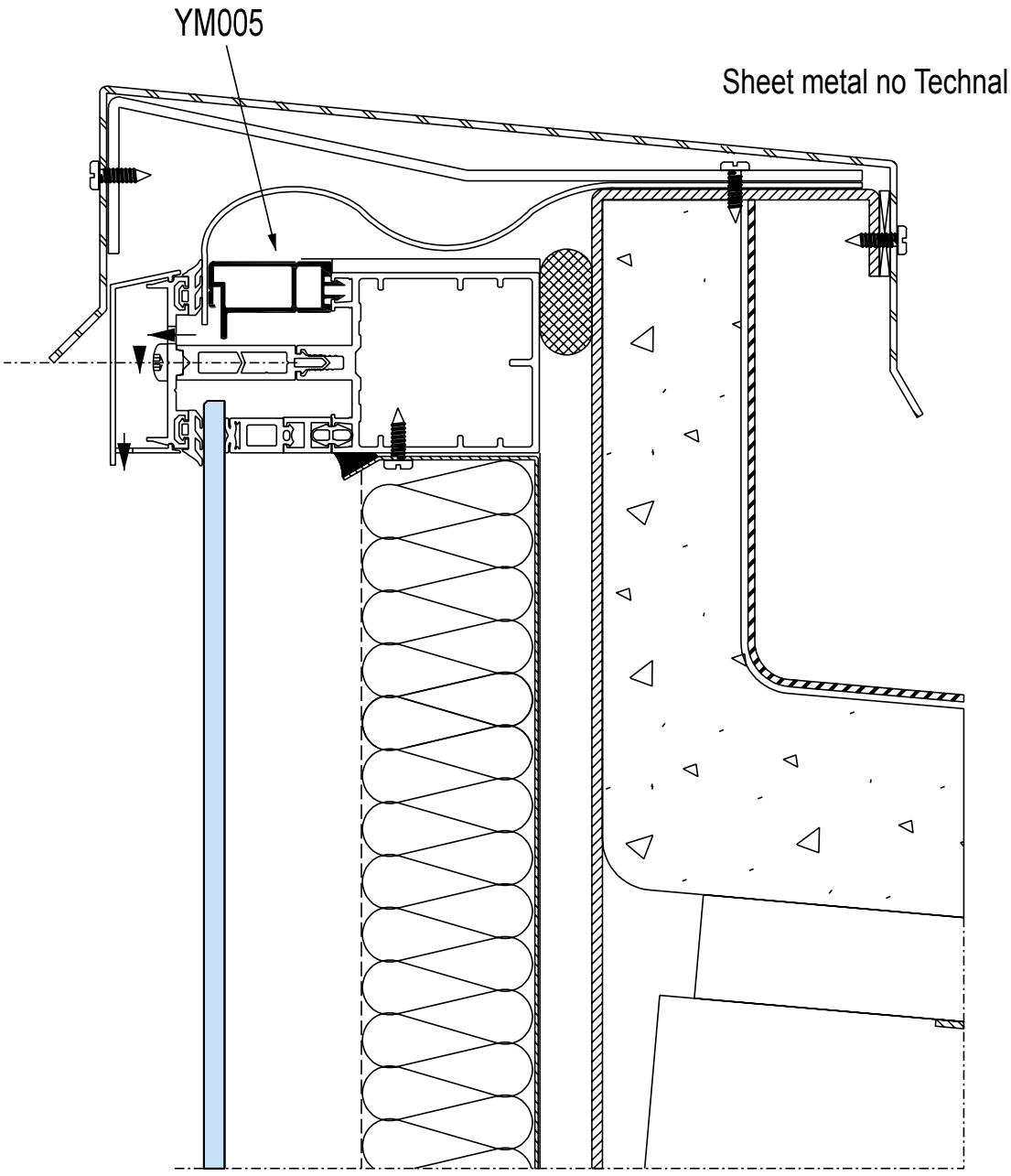


Scale: 1:1

geffc102

Vertical cross section





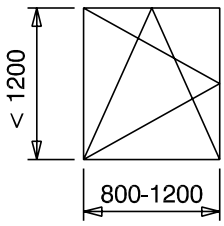
Scale: 1:2

geffc101

TECHNAL®

Hinge hardware summary

Tilt-and-turn hinge hardware



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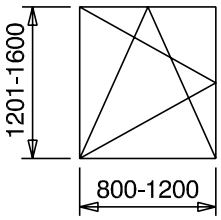

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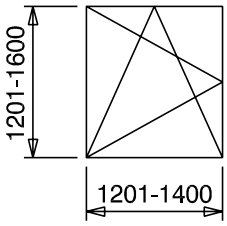

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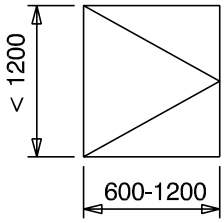
In-opening hinge hardware



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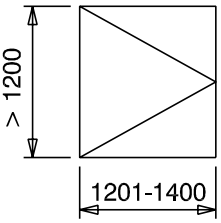

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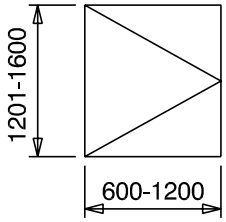

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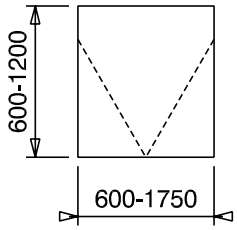
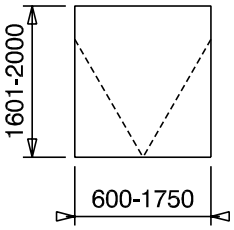
Embedded casing for tilt-and-turn and in-opening Page 105

Top-hung hinge hardware



Page 106



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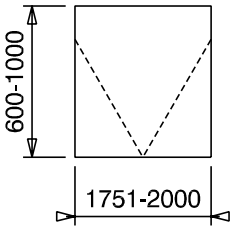

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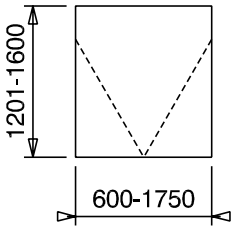

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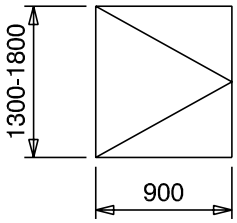
Embedded casing for top-hung Page 110

Fire access hinge hardware



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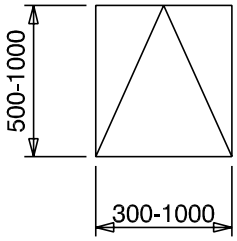
Bottom-hung hinge hardware



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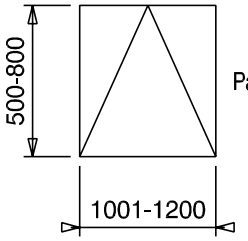

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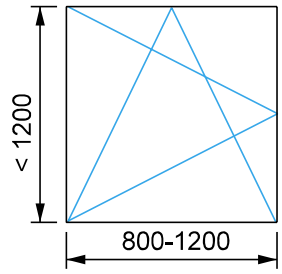
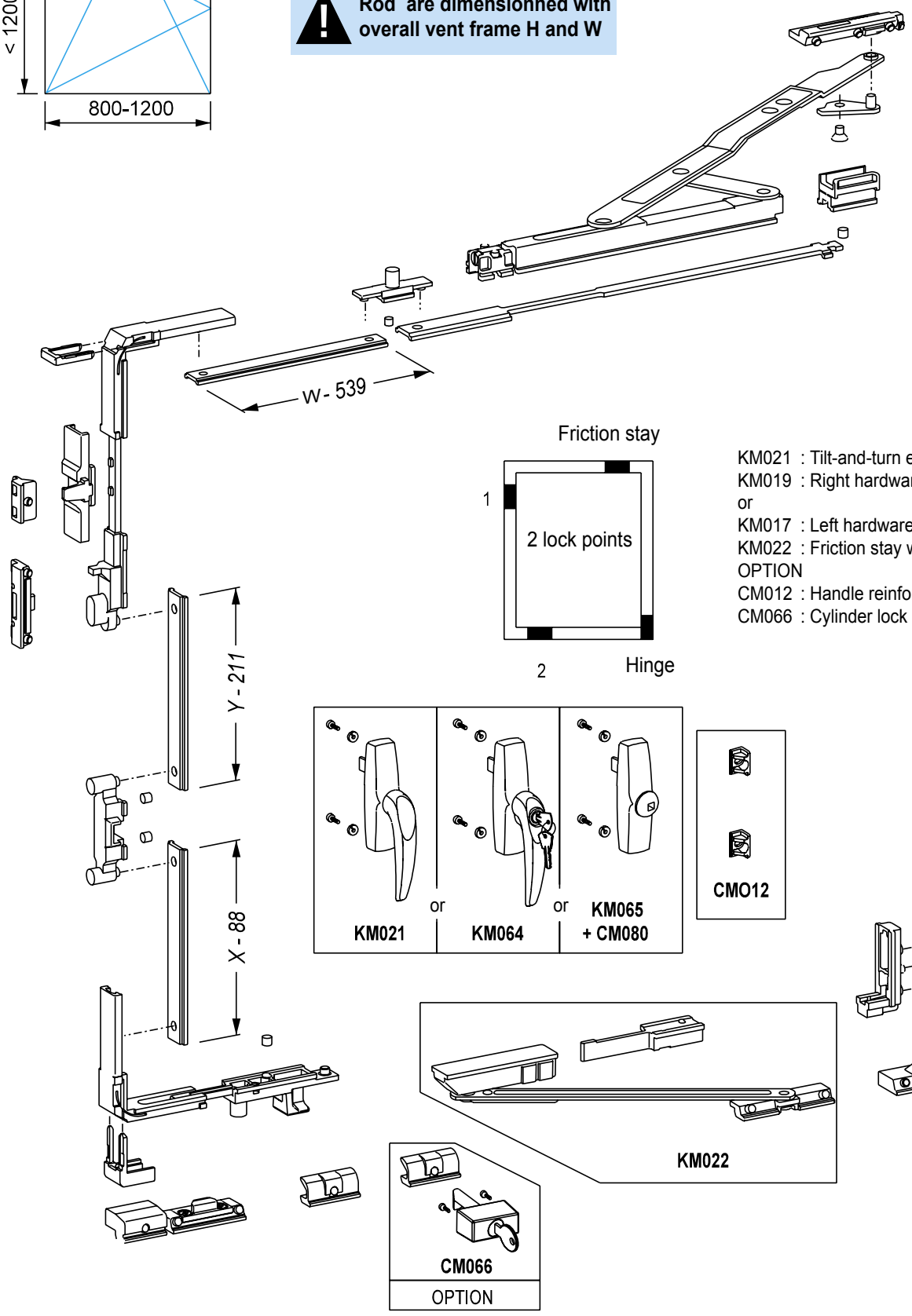
geffc188

Hinge hardware summary

Tilt and turn hinge hardware
vent width 800-1200
vent height < 1200

Rod are dimensionned with overall vent frame H and W





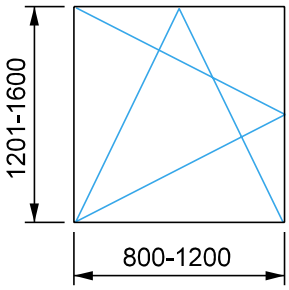
KM021 : Tilt-and-turn espagnolette
KM019 : Right hardware
or
KM017 : Left hardware
KM022 : Friction stay with brake
OPTION
CM012 : Handle reinforcers
CM066 : Cylinder lock

geffc105

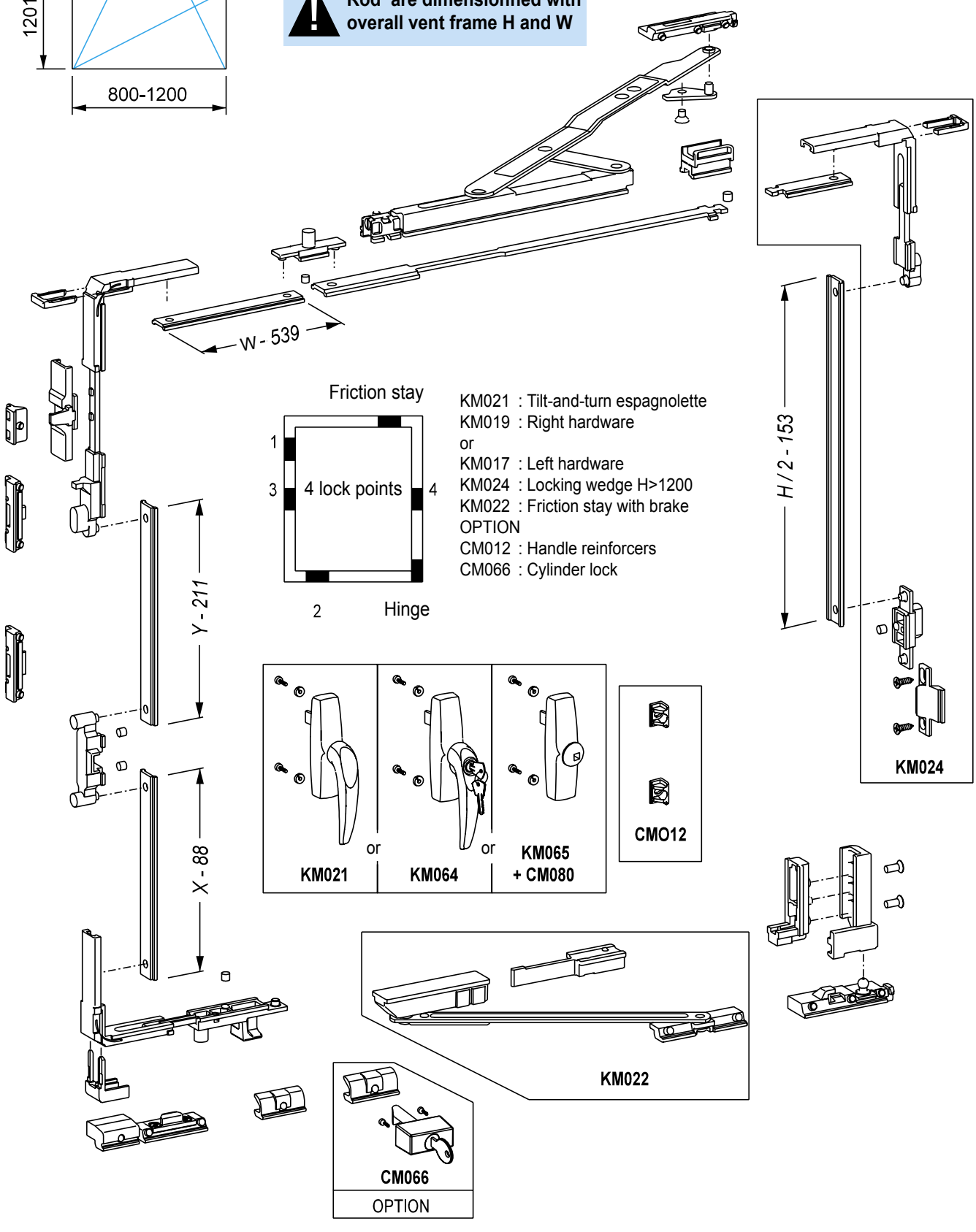
TECHNAL®

Hinge hardware summary

Tilt and turn hinge hardware
vent width 800-1200
vent height 1201-1600



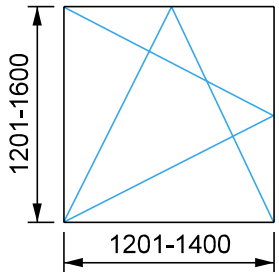
Rod are dimensionned with overall vent frame H and W



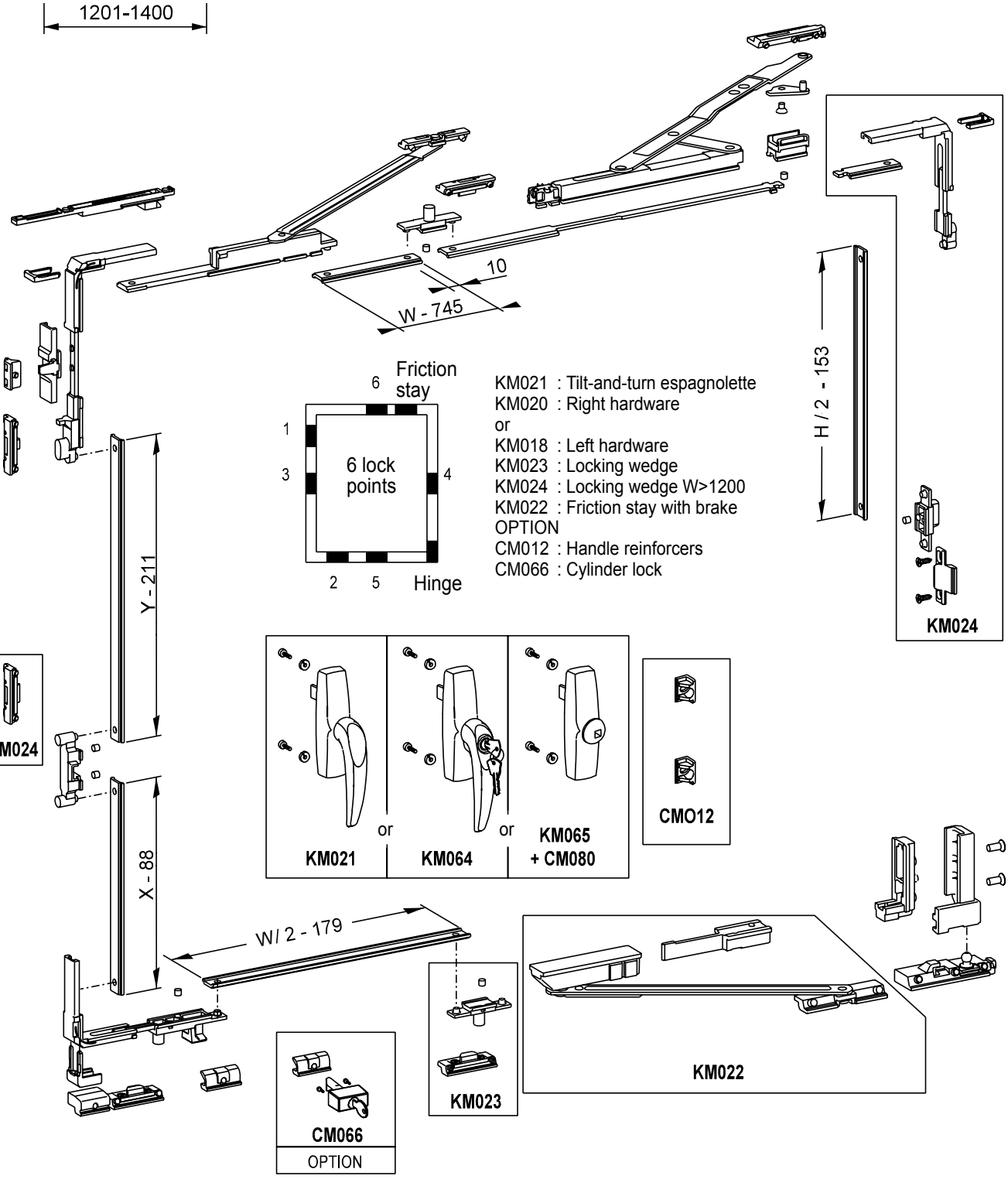
geffc106

Hinge hardware summary

Tilt and turn hinge hardware
vent width 1201-1400
vent height 1201-1600



Rod are dimensionned with overall vent frame H and W



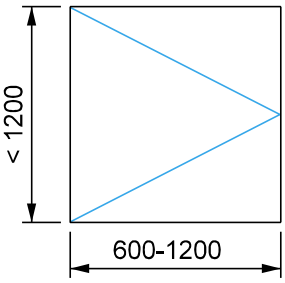
geffc107

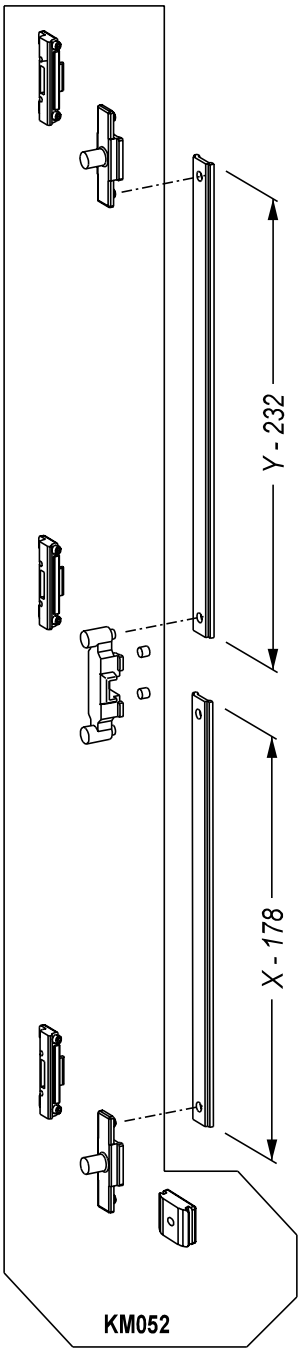
TECHNAL®

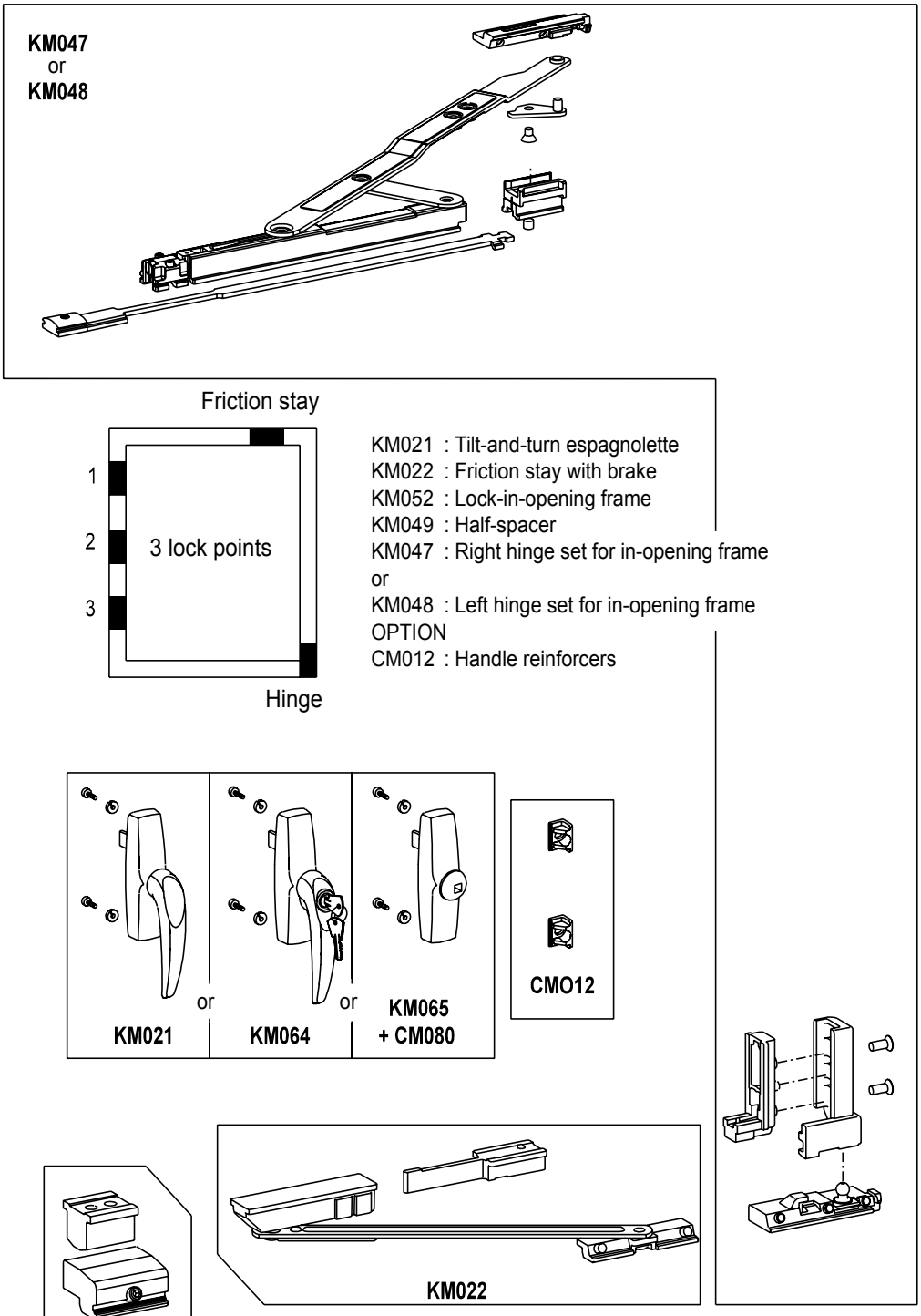
Hinge hardware summary

In-opening hinge hardware
vent width 600-1200
vent height < 1200

Rod are dimensionned with overall vent frame H and W





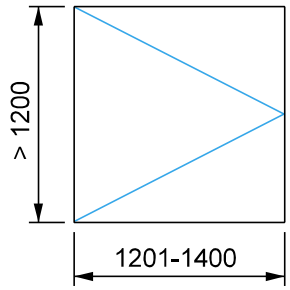


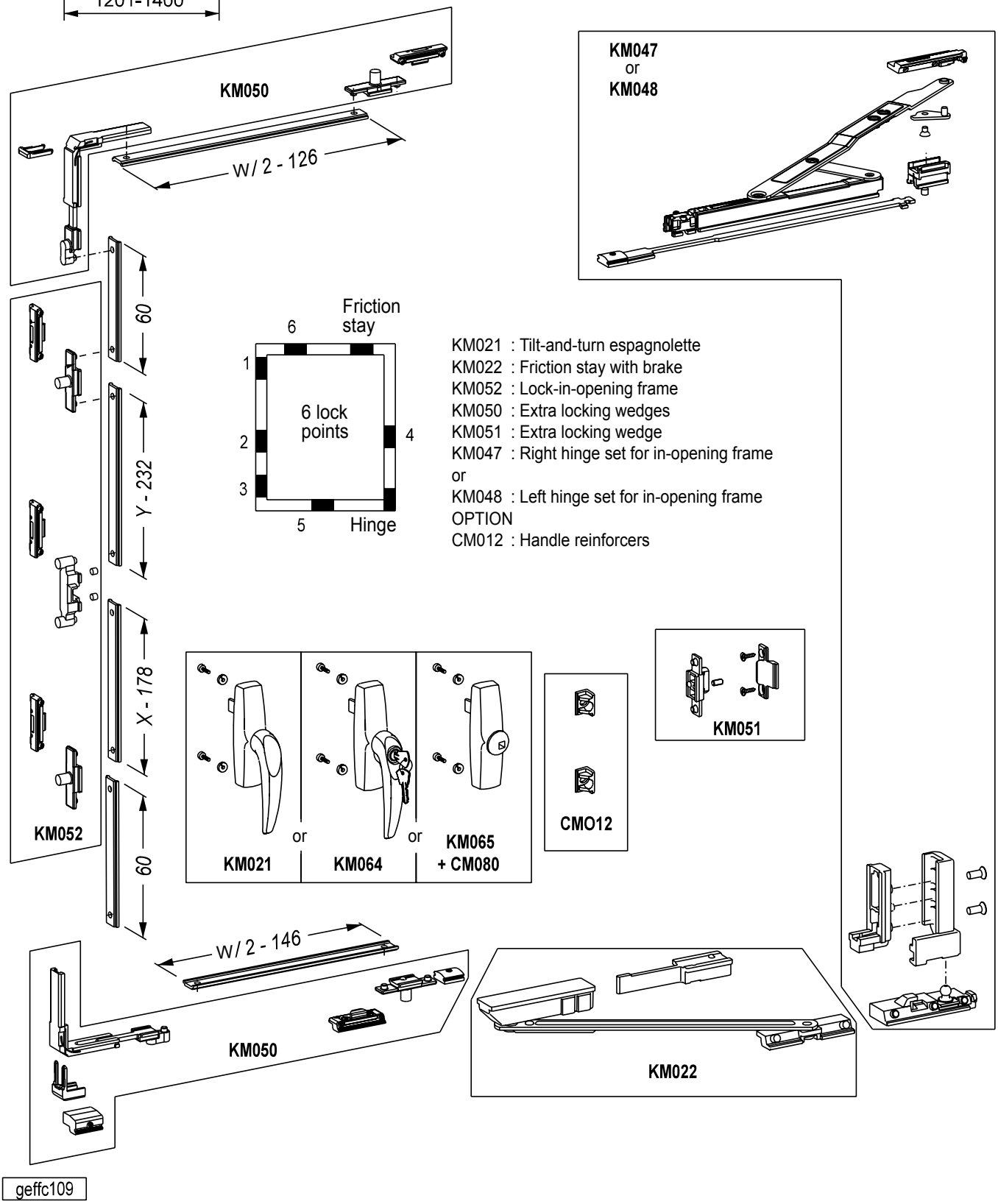
geffc108

Hinge hardware summary

In-opening hinge hardware
vent width 1201-1400
vent height > 1200

Rod are dimensionned with overall vent frame H and W



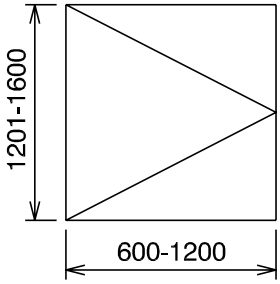


geffc109

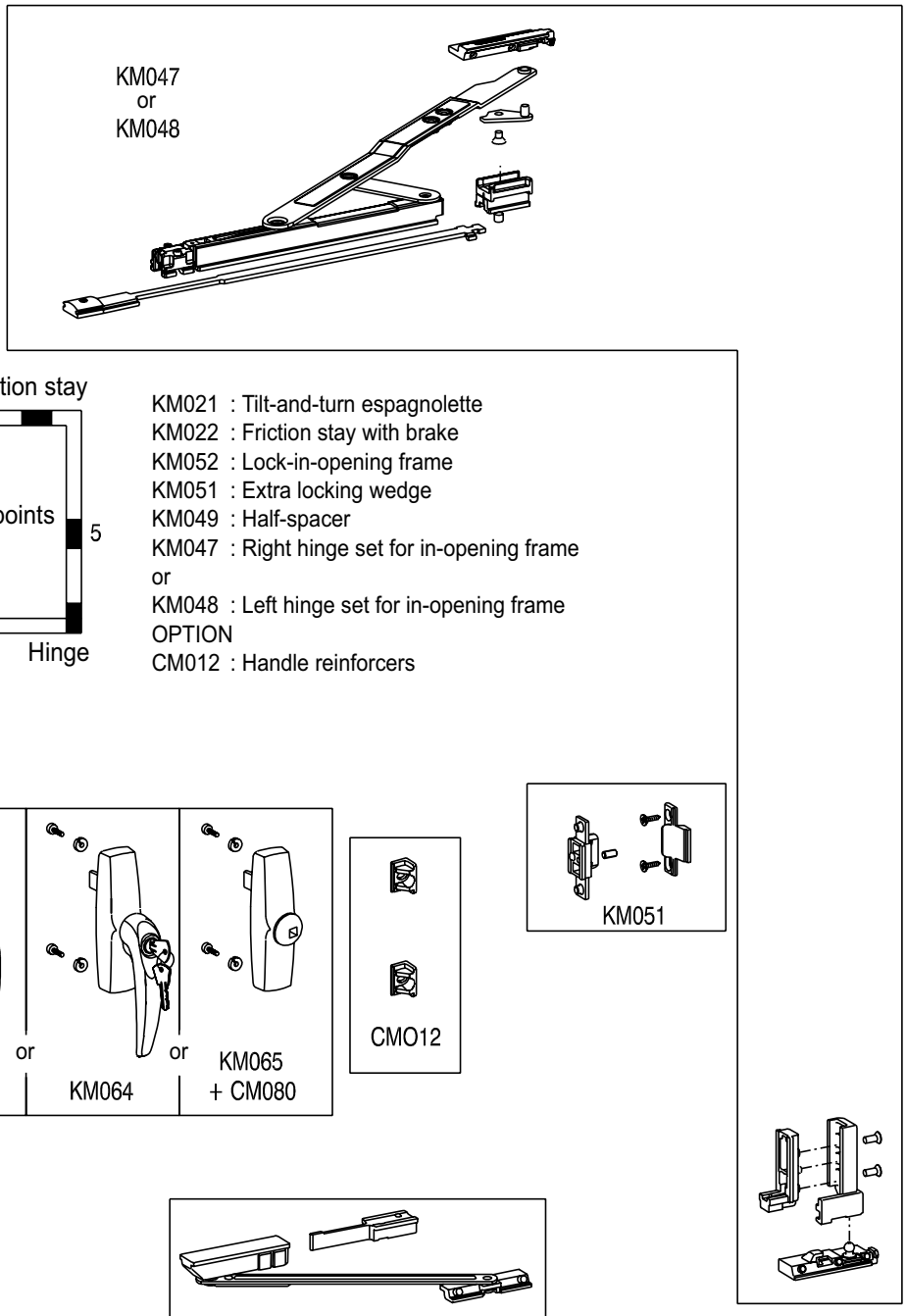
TECHNAL®

Hinge hardware summary

In-opening hinge hardware
vent width 600-1200
vent height 1201-1600



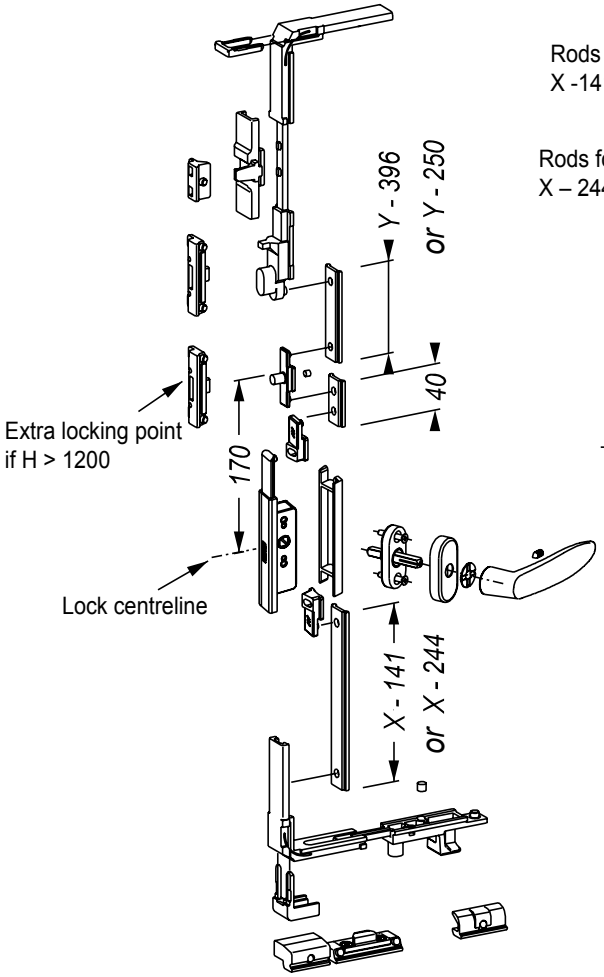
Rod are dimensionned with overall vent frame H and W



geffc110

Hinge hardware summary

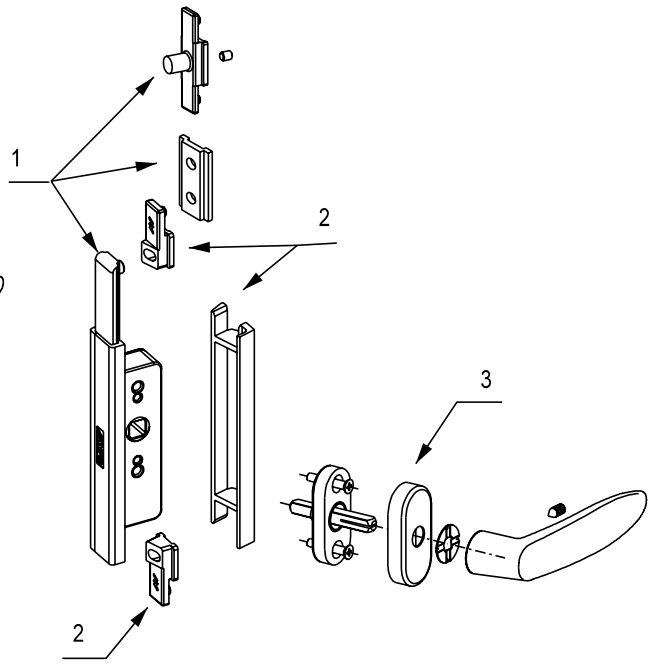
Embedded casing for tilt-and-turn and in-opening



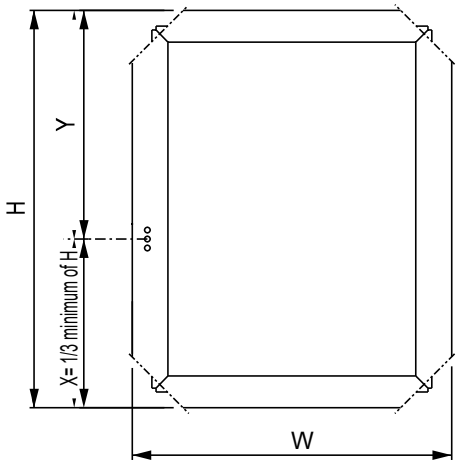
Rods for tilt-and-turn
X -141 and Y - 396

Rods for in-opening
X – 244 and Y - 250

1 - KM058 : Embedded espagnolette rod for tilt-and-turn
2 - KM059 : Wedge and drivers
3 - KF039 : Lever and escutcheon



Rod are dimensionned with overall vent frame H and W



Assembly instructions:

1. Fix the wedge (2) in line with the machining on the profile
2. Slide the sliding parts (drivers (2), rod and bolt (1))
3. Engage the casing in the wedge and slot it into the drivers (2)
4. Mount the securing base plate (4) and fix it to the casing
5. Secure the escutcheon (3) onto the base plate
6. Mount the lever (3) and lock into place

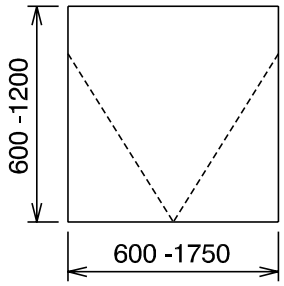
DIMENSIONS AND ACCESSORIES ARE IDENTICAL TO THE STANDARD TILT-AND-TURN

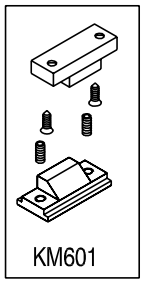
geffc111

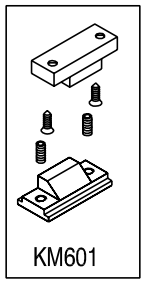
TECHNAL®

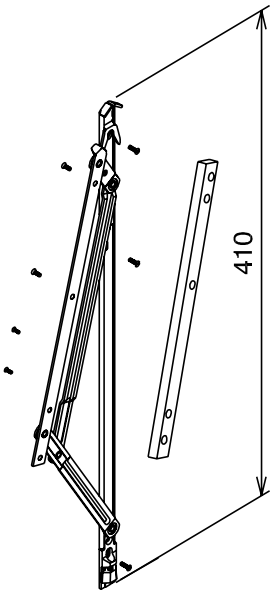
Hinge hardware summary

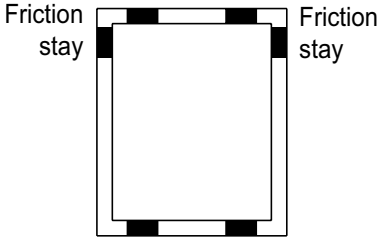
Top-hung hinge hardware
vent width 600-1750
vent height 600-1200



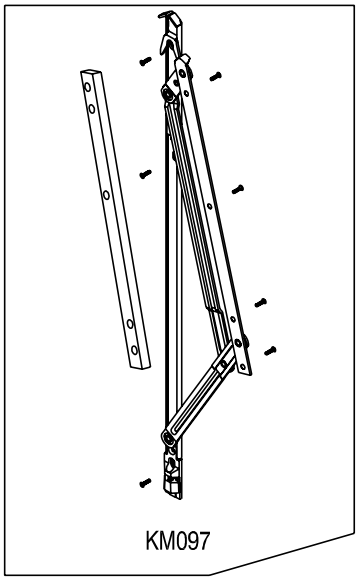


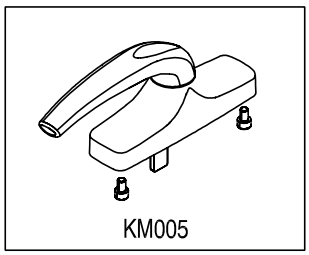


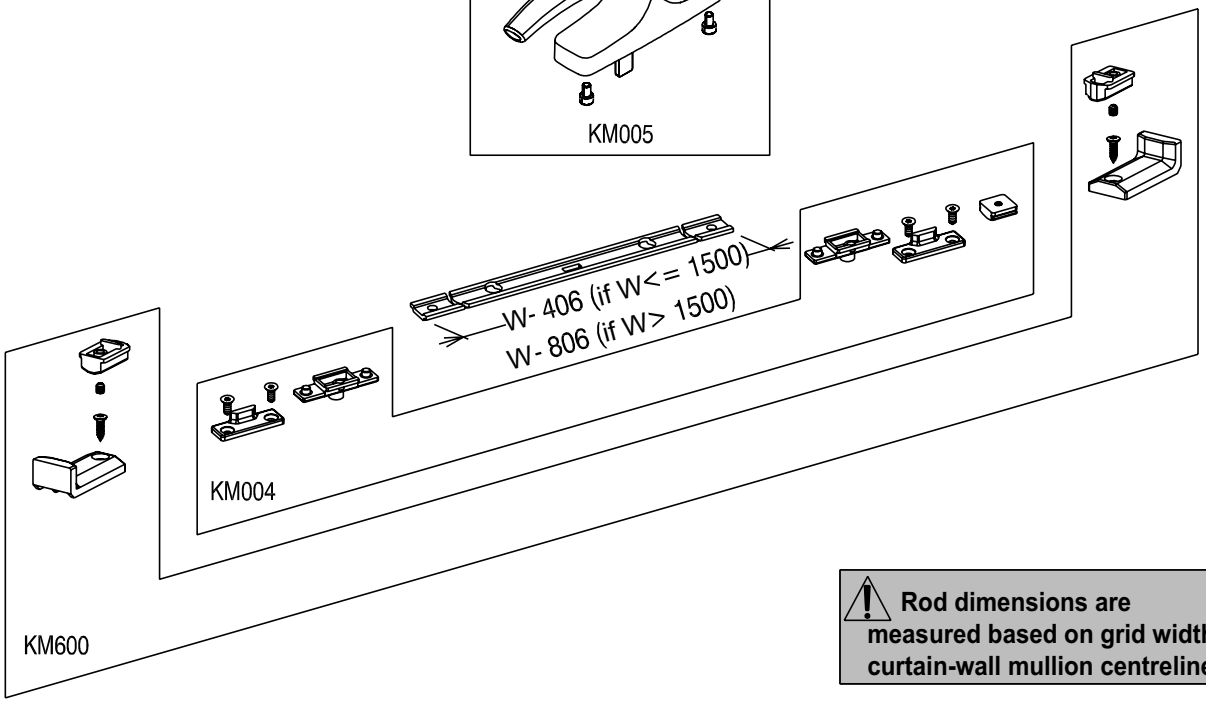




KM004 : Top-hung locking mechanism
KM005 : Top-hung espagnolette bolt
KM097 : Stainless steel friction stay (small size) if H<1200
KM601 : Locking wedge
KM600 : Spacer





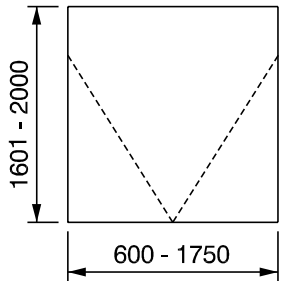


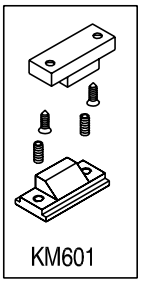
⚠ Rod dimensions are measured based on grid width : curtain-wall mullion centrelines

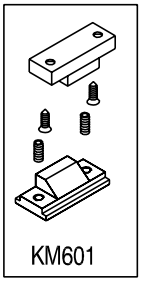
geffc112b

Hinge hardware summary

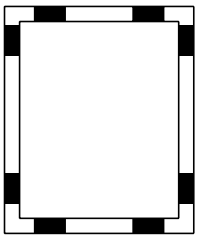
Top-hung hinge hardware
vent width 600-1750
vent height 1601-2000



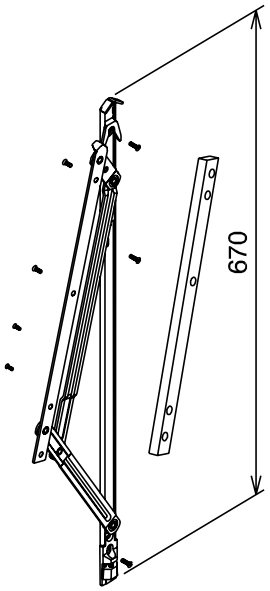




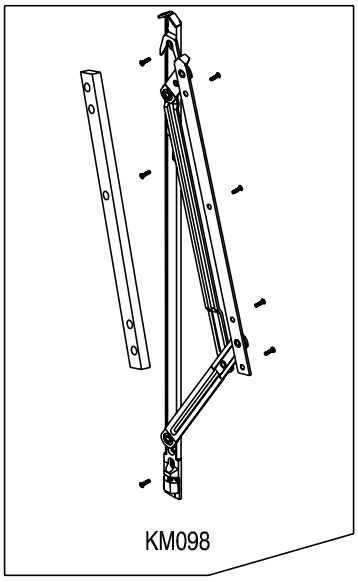
Friction stay

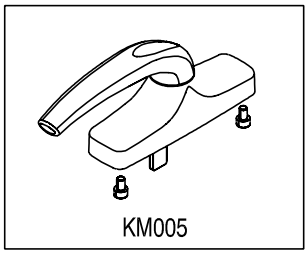


Friction stay

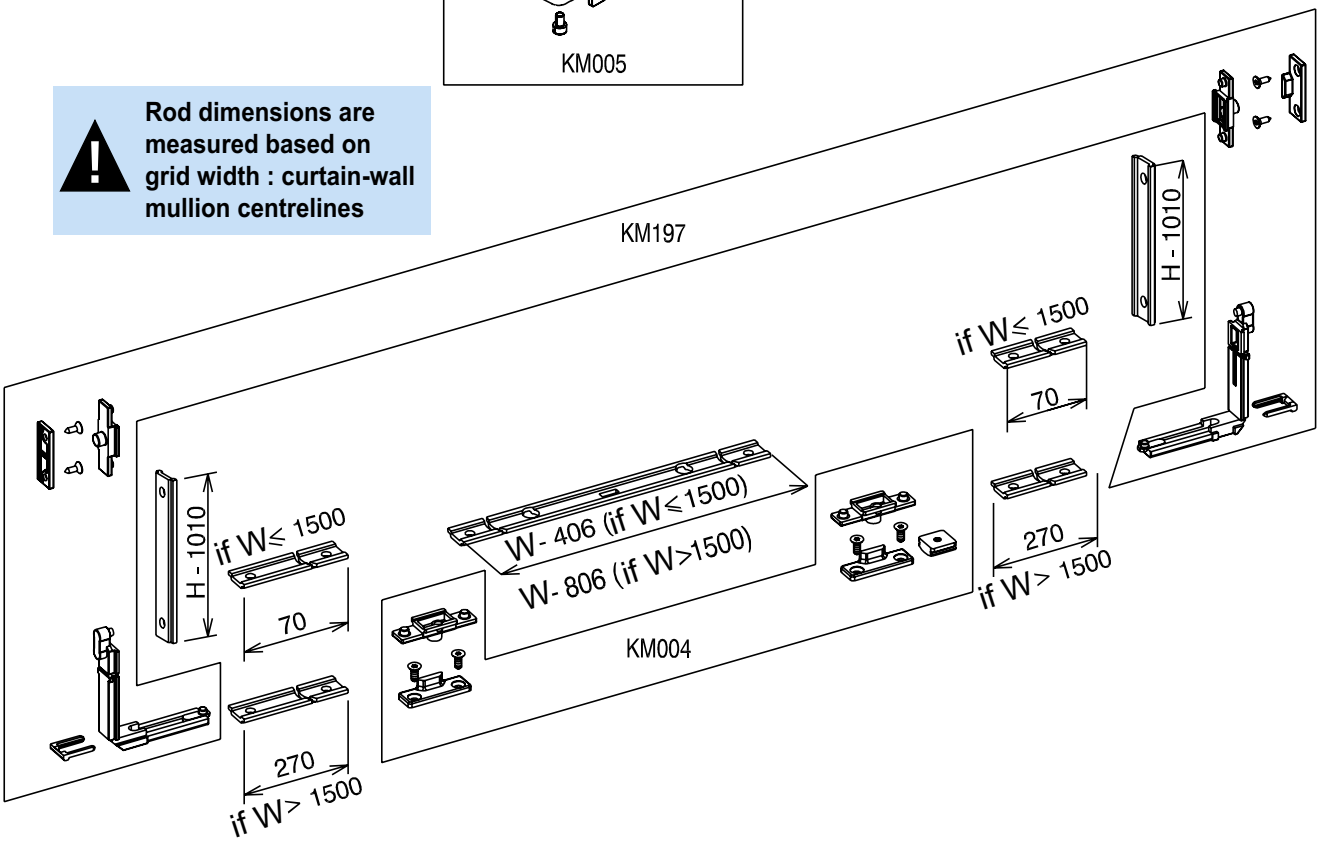


KM004 : Top-hung locking mechanism
KM005 : Top-hung espagnolette bolt
KM098 : Stainless steel friction stay (large size)
KM601 : 2 MX top-hung reinforced (1 with W<950)
KM197 : Additional lock point (H>1600)





Rod dimensions are measured based on grid width : curtain-wall mullion centrelines



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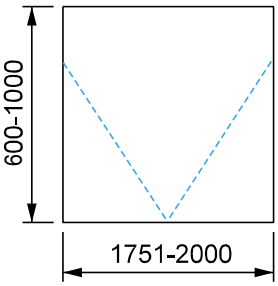
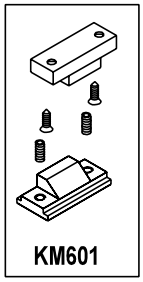
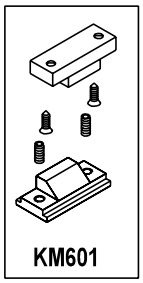
TECHNAL®

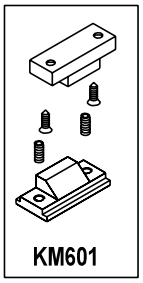
Hinge hardware summary

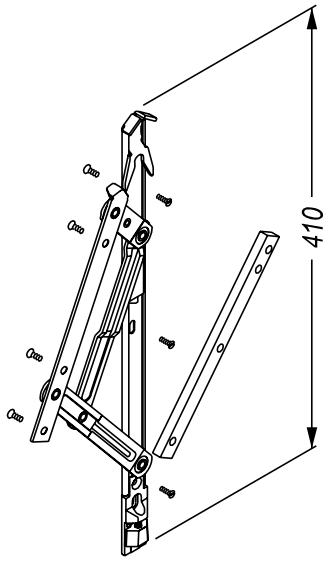
Top-hung hinge hardware
vent width 1751-2000
vent height 600-1000

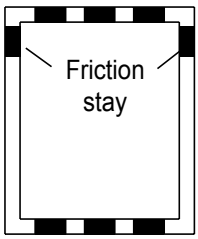




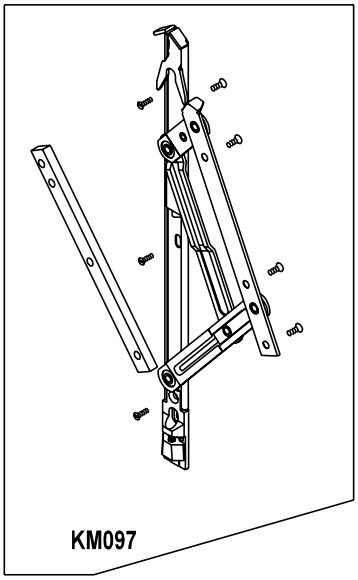


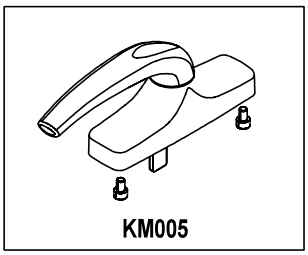




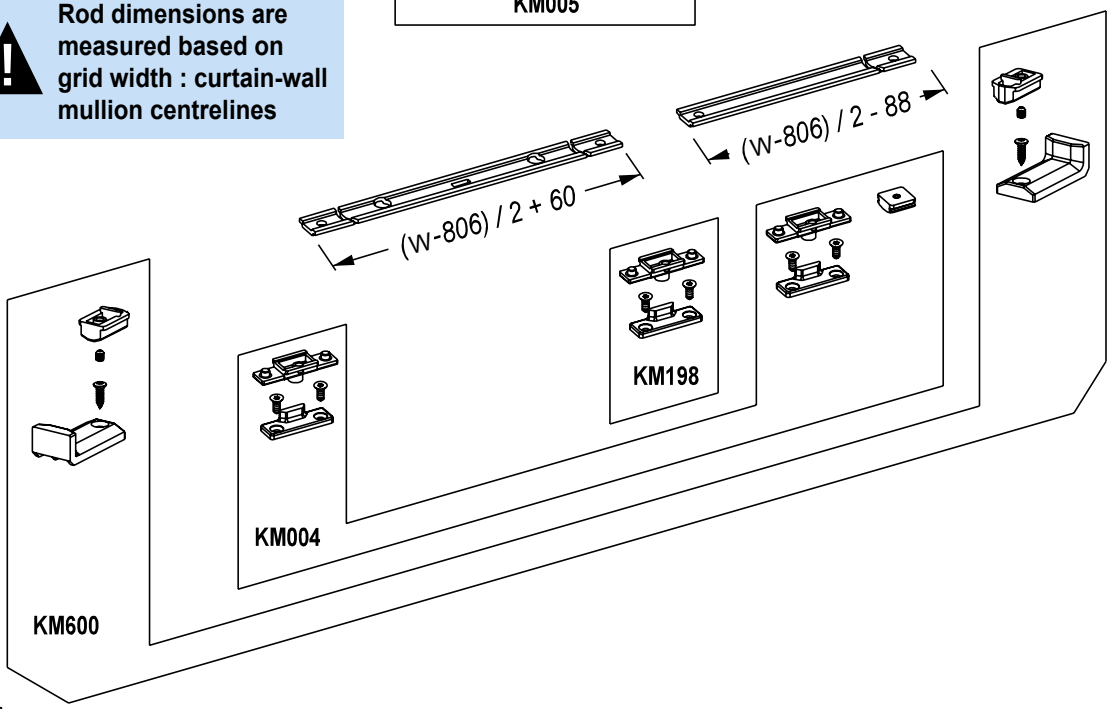


KM004 : Top-hung locking mechanism
KM005 : Top-hung espagnolette bolt
KM097 : Small size stainless friction stay
KM601 : 3 MX top-hung reinforced for W>1750
KM600 : Spacer
KM198 : Additional lock point supplementary for W>1750





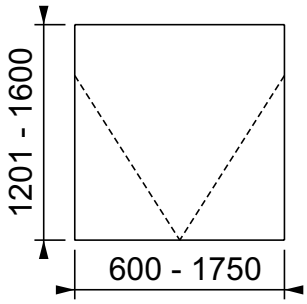
Rod dimensions are measured based on grid width : curtain-wall mullion centrelines

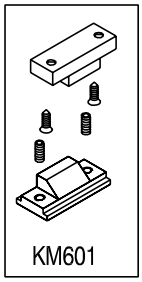


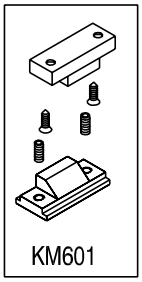
geffc114

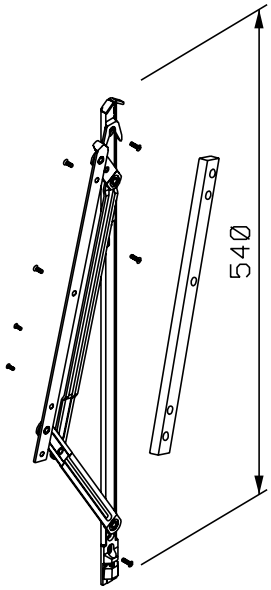
Hinge hardware summary

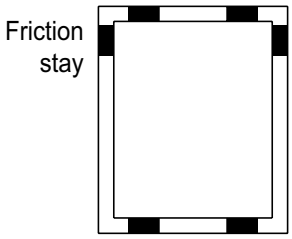
Top-hung hinge hardware
vent width 600-1750
vent height 1201-1600



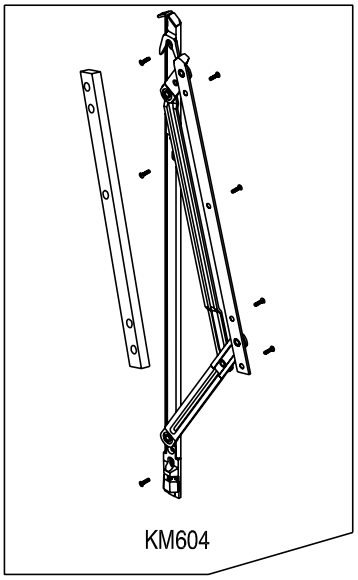


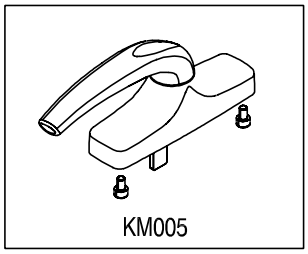




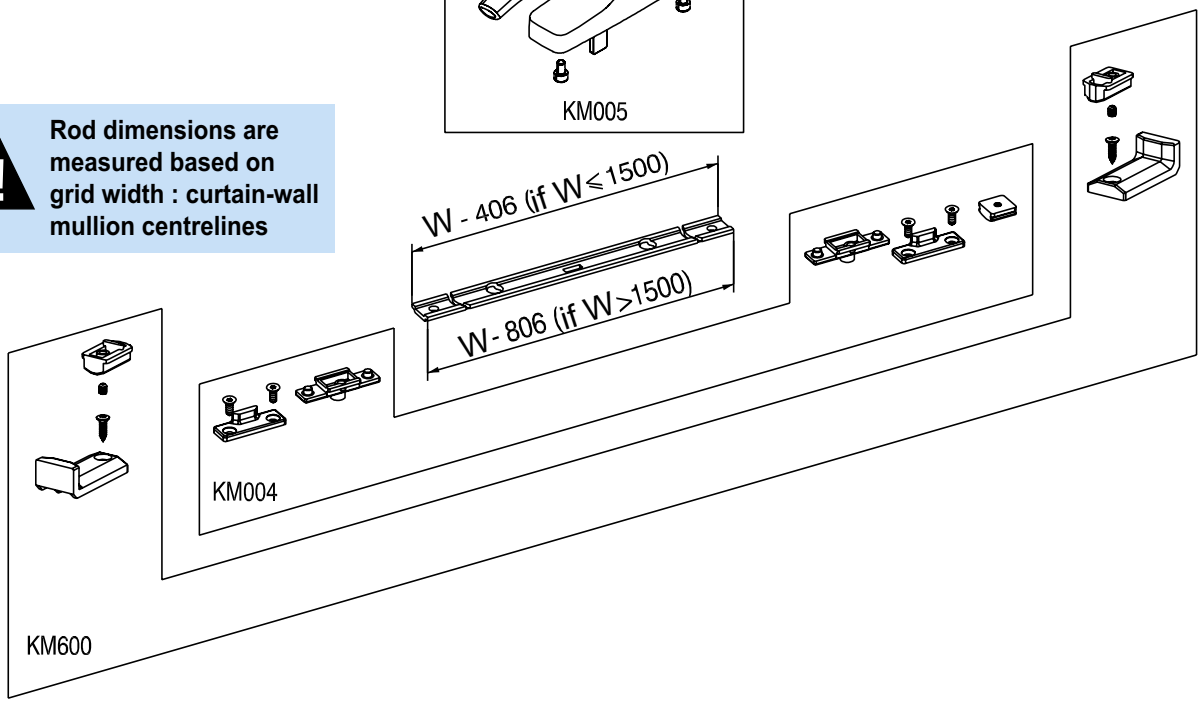


KM004 : Top-hung locking mechanism
KM005 : Top-hung espagnolette bolt
KM604 : Stainless steel friction stay (medium size)
KM601 : 2 MX top-hung reinforced (1 with W<950)
KM600 : Spacer





Rod dimensions are measured based on grid width : curtain-wall mullion centrelines



geffc146

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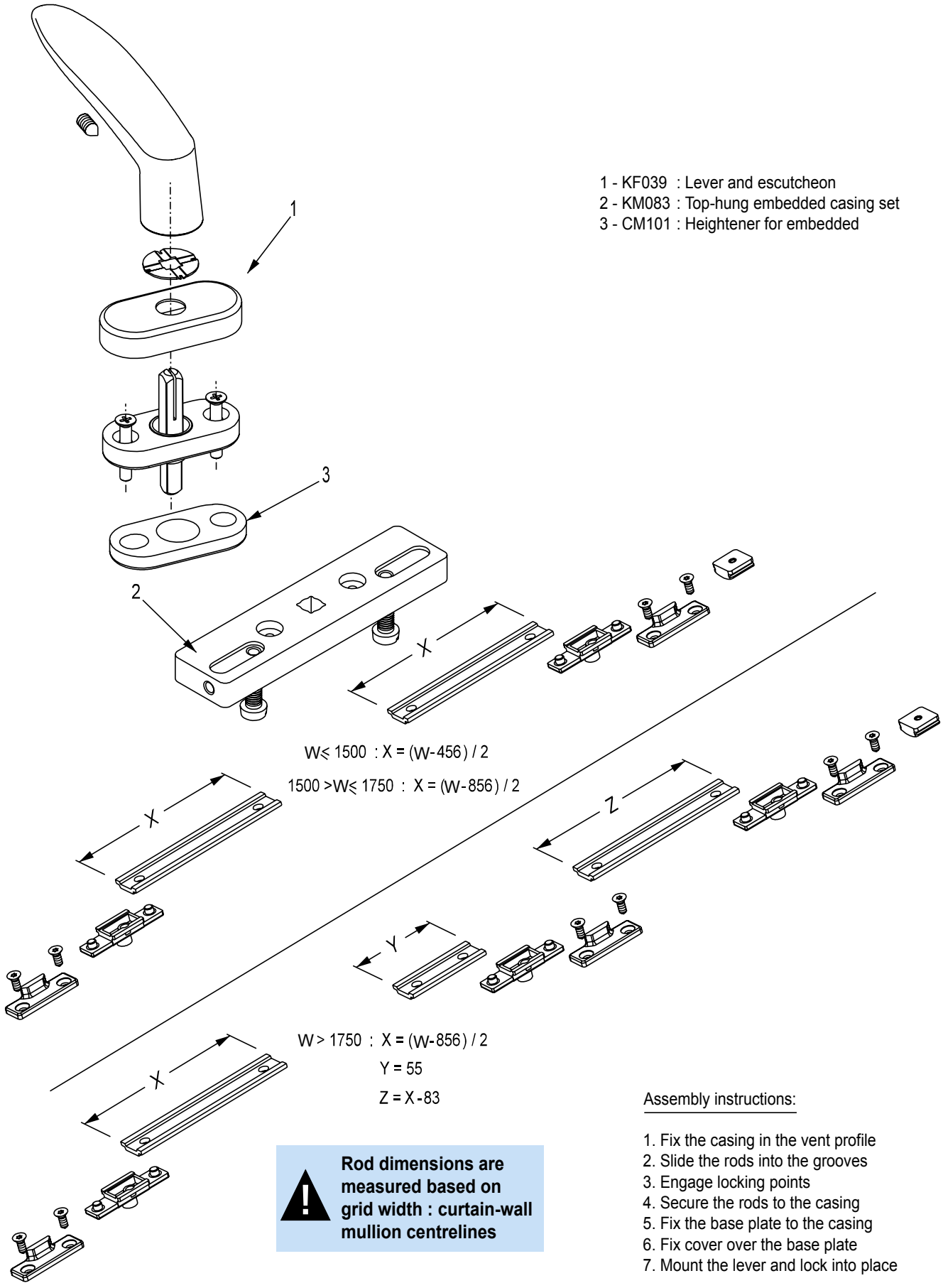
Hinge hardware summary

Embedded casing for top-hung



1 - KF039 : Lever and escutcheon
2 - KM083 : Top-hung embedded casing set
3 - CM101 : Heightener for embedded

W≤ 1500 : X = (W-456) / 2

1500 >W≤ 1750 : X = (W-856) / 2

W > 1750 : X = (W-856) / 2

Y = 55

Z = X-83

Rod dimensions are measured based on grid width : curtain-wall mullion centrelines

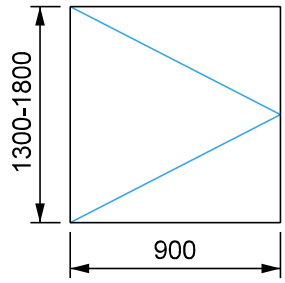
Assembly instructions:

1. Fix the casing in the vent profile
2. Slide the rods into the grooves
3. Engage locking points
4. Secure the rods to the casing
5. Fix the base plate to the casing
6. Fix cover over the base plate
7. Mount the lever and lock into place

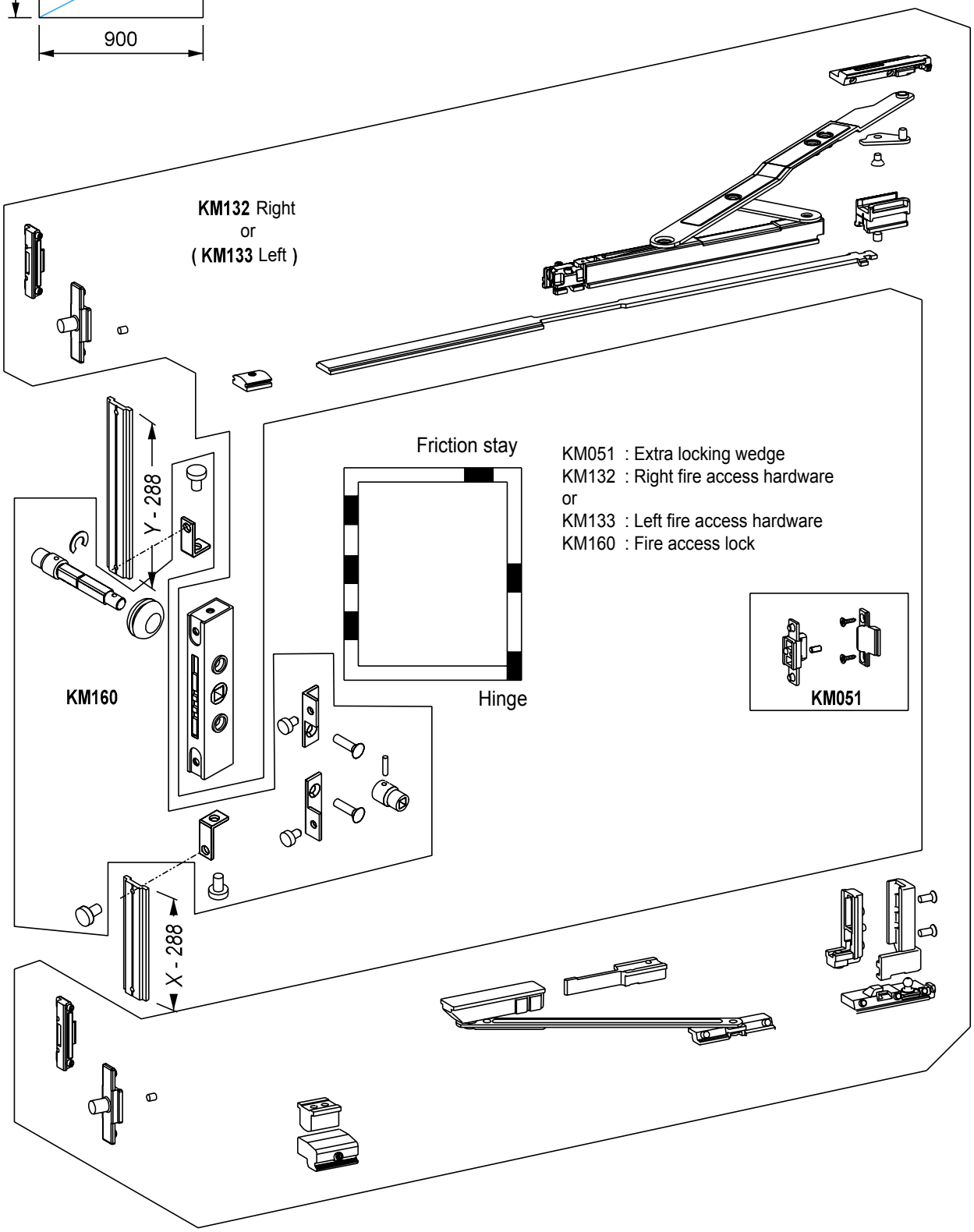
geffc115

Hinge hardware summary

Fire access hinge hardware
vent width 900
vent height 1300-1800



Rod dimensions are overall vent frame H and W



geffc116

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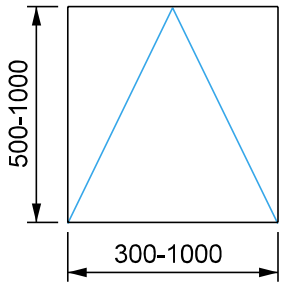
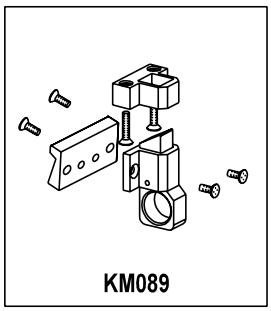
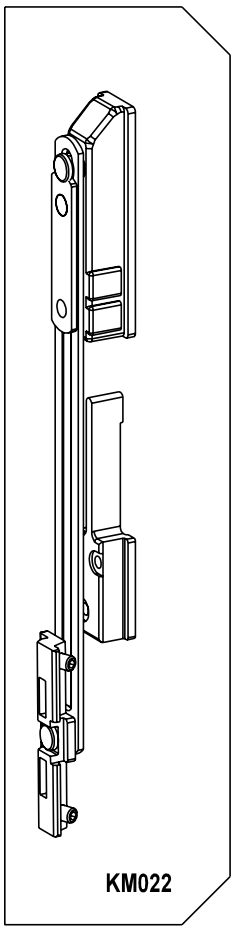
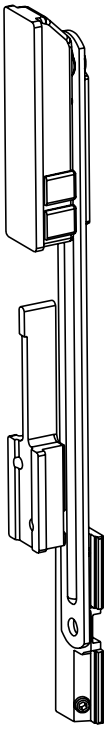
Hinge hardware summary

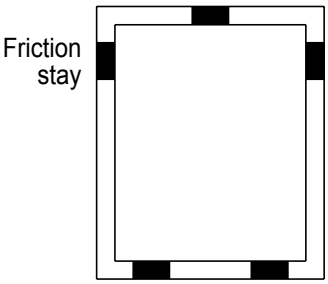
Bottom-hung hinge hardware
vent width 300-1000
vent height 500-1000



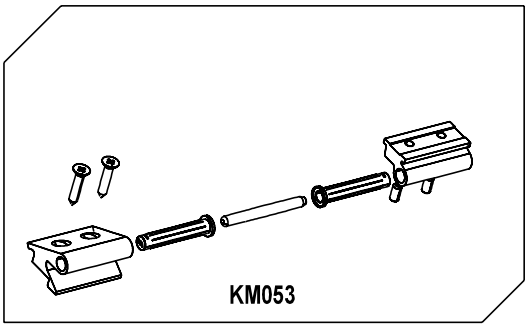


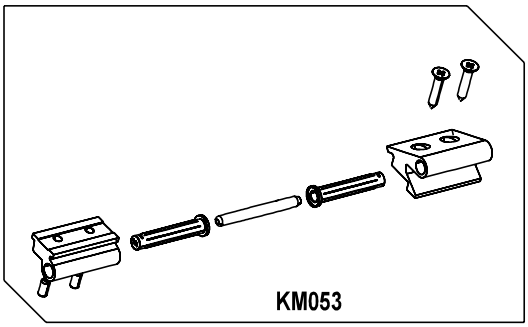






KM022 : Friction stay with brake
KM053 : 2 hinges for bottom-hung frame
KM089 : 1 latch





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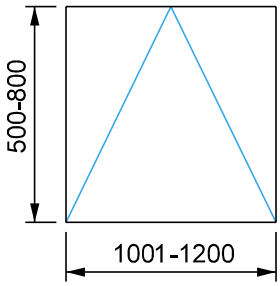
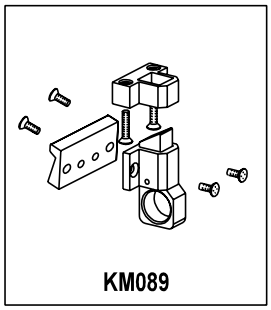
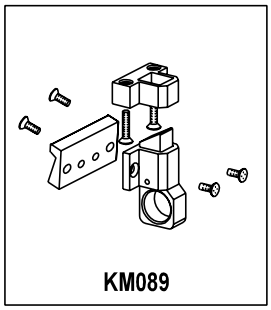
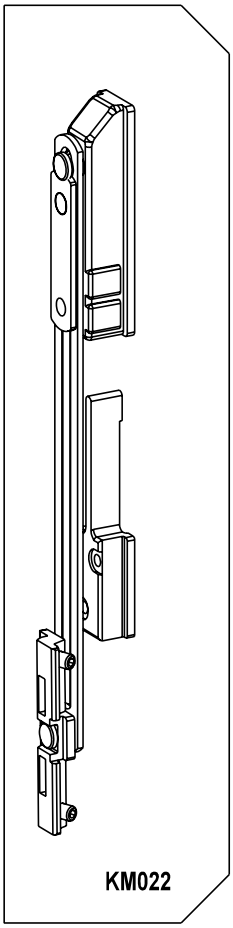
Hinge hardware summary

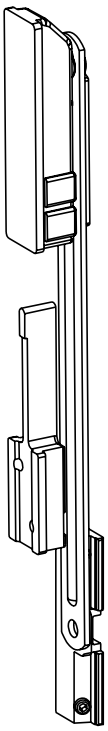
Bottom-hung hinge hardware
vent width 1001-1200
vent height 500-800

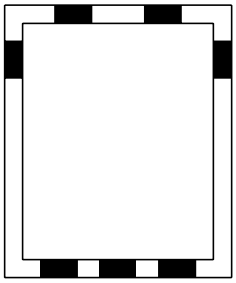




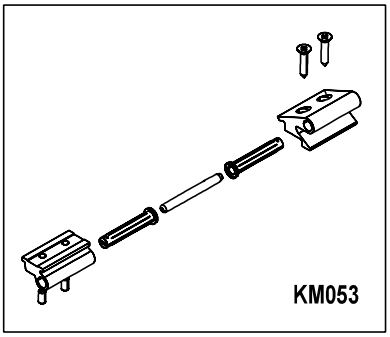


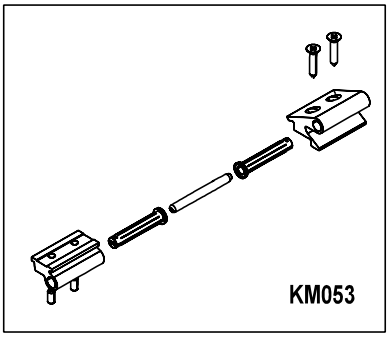


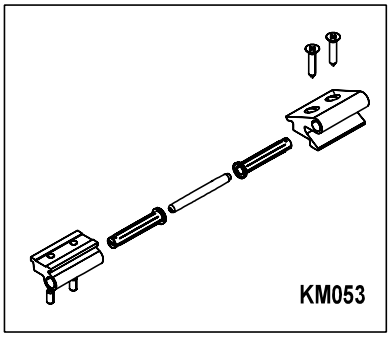




KM022 : Friction stay with brake
KM053 : 2 hinges for bottom-hung frame
KM089 : 1 latch







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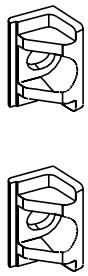
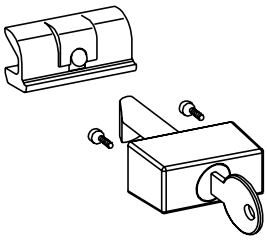
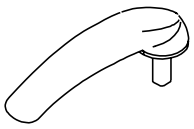
Hardware summary



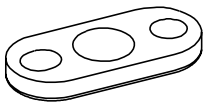
CM012 Handle reinforced



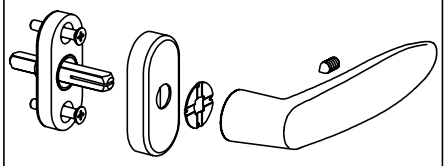
CM066 Cylinder lock



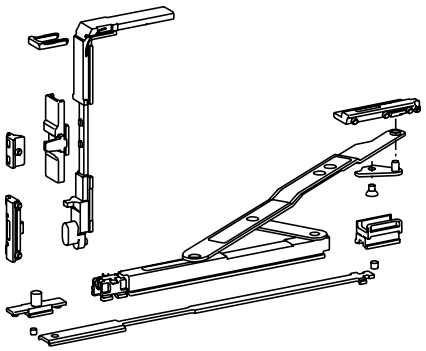
Handle for casement bolt
CM080

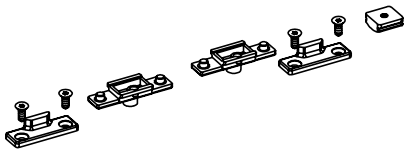


Heightener for embedded casing
CM101

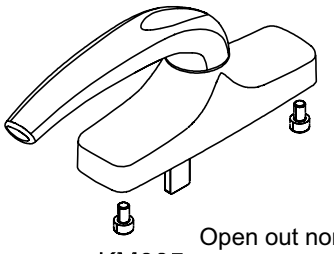


KF039 Level and escucheron

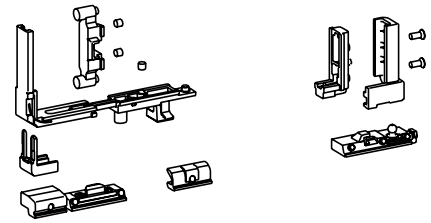




KM004 Top-hung locking point

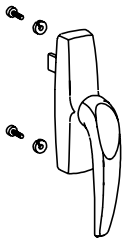


KM005 Open out non locking handle

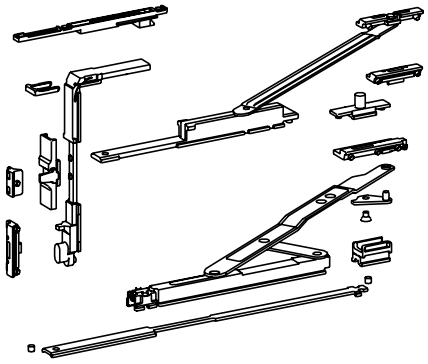


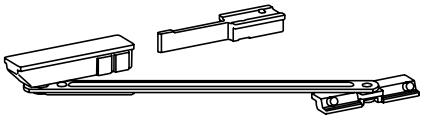
KM017 Left hardware

KM019 Right hardware

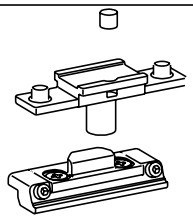


KM021 Tilt-and-turn handle

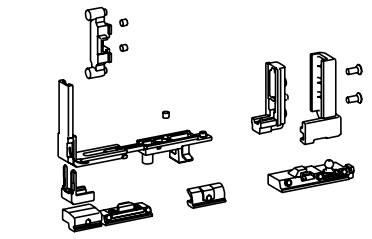




KM022 Friction stay with brake

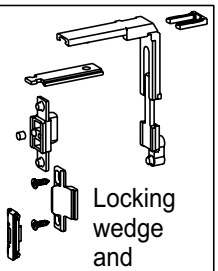


KM023 Locking wedge



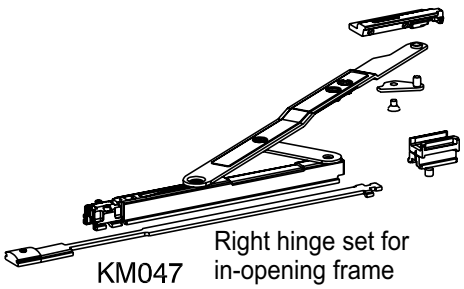
KM018 Left hardware

KM020 Right hardware

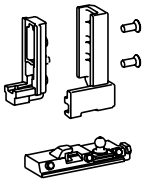


KM024 Locking wedge and connector

geffc191

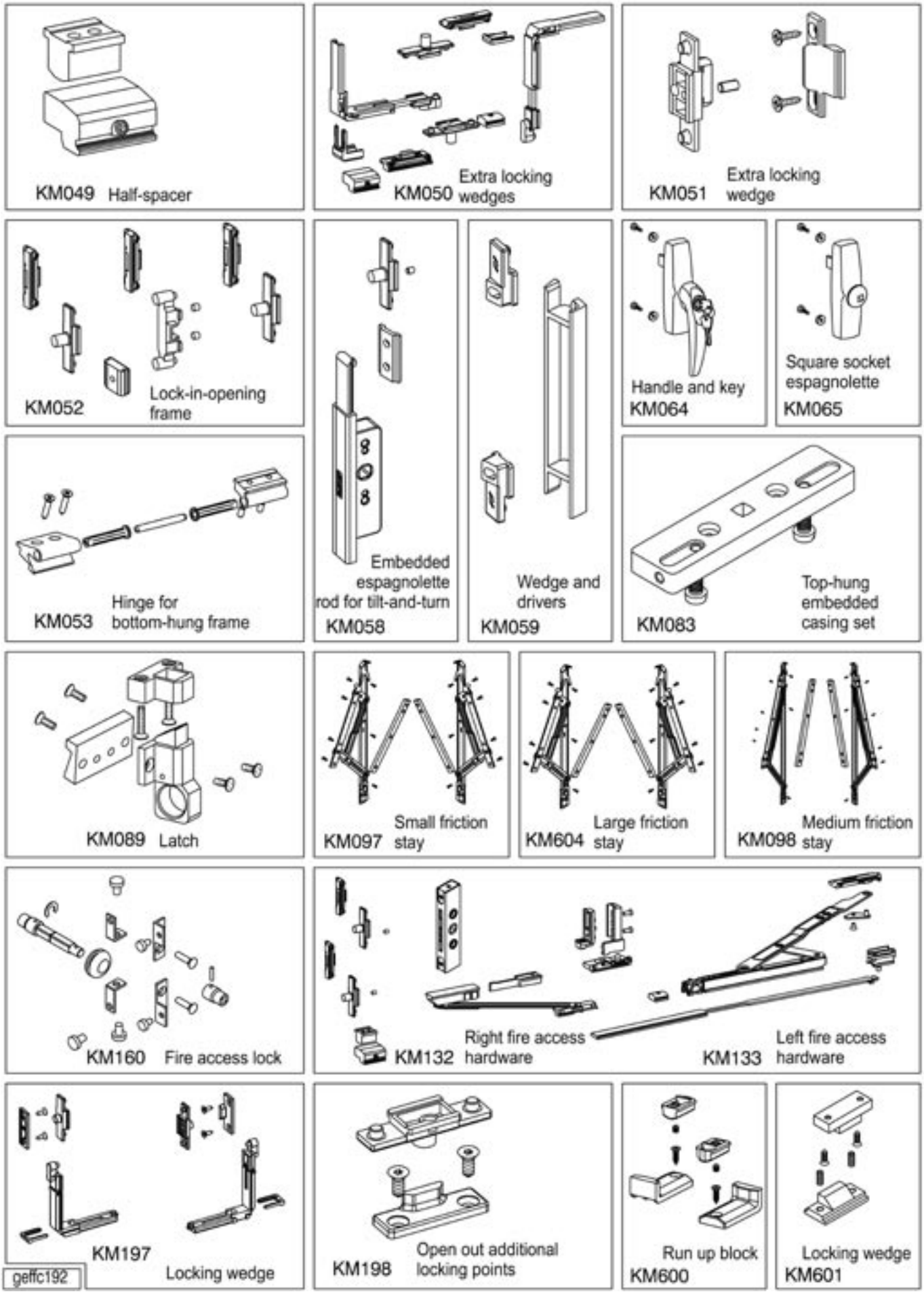


KM047 Right hinge set for in-opening frame



KM048 Left hinge set for in-opening frame

Hardware summary



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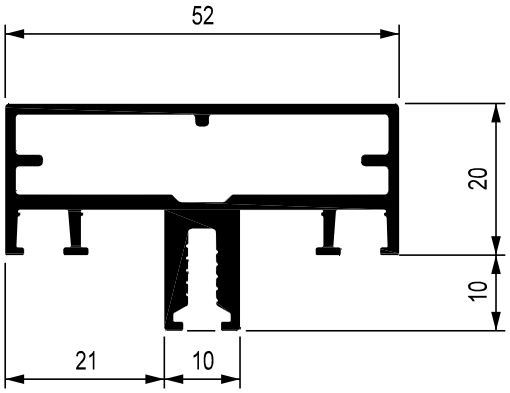
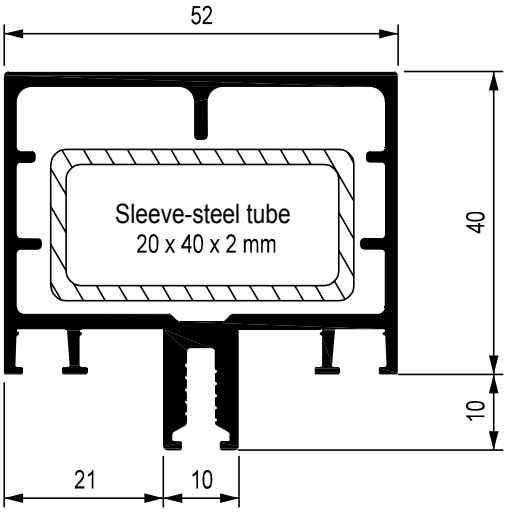
Profile summary

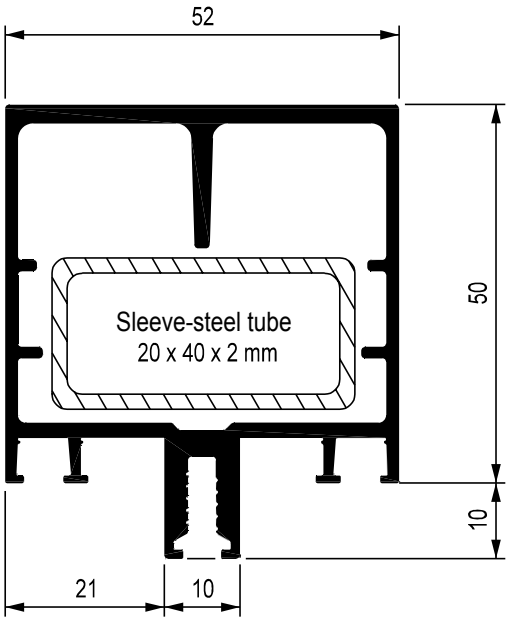
Mullion/transom profiles



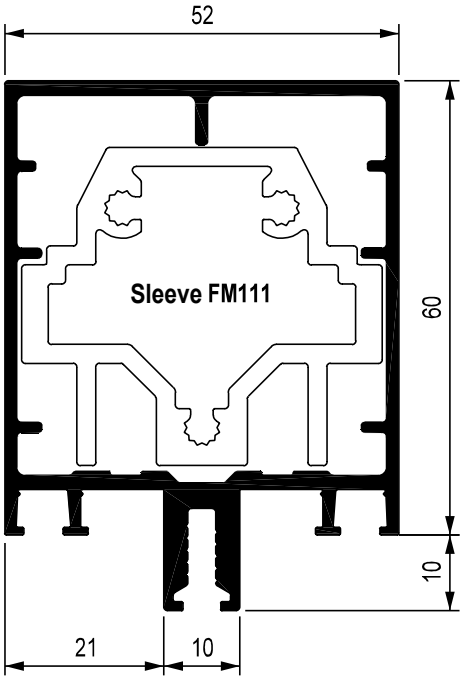
FM165



FM166



FM252

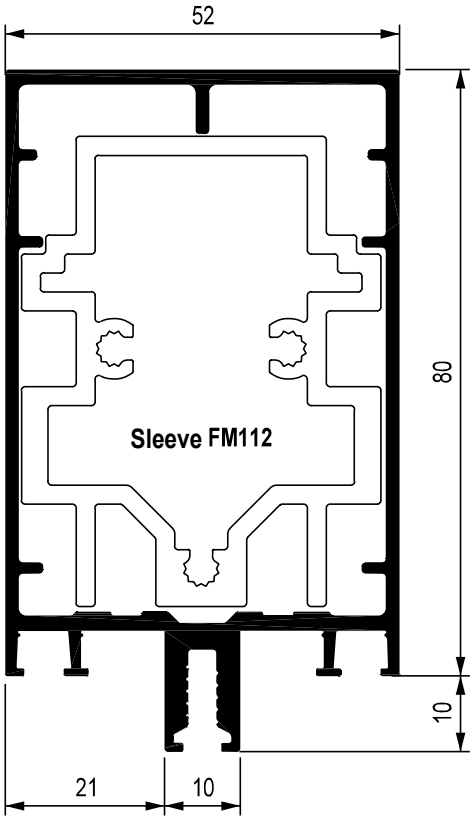


FM155

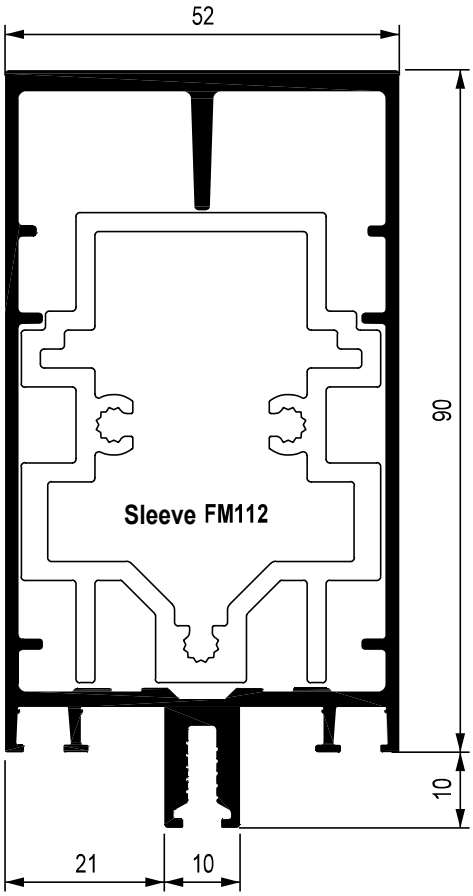
geffc119

Profile summary

Mullion/transom profiles



FM156



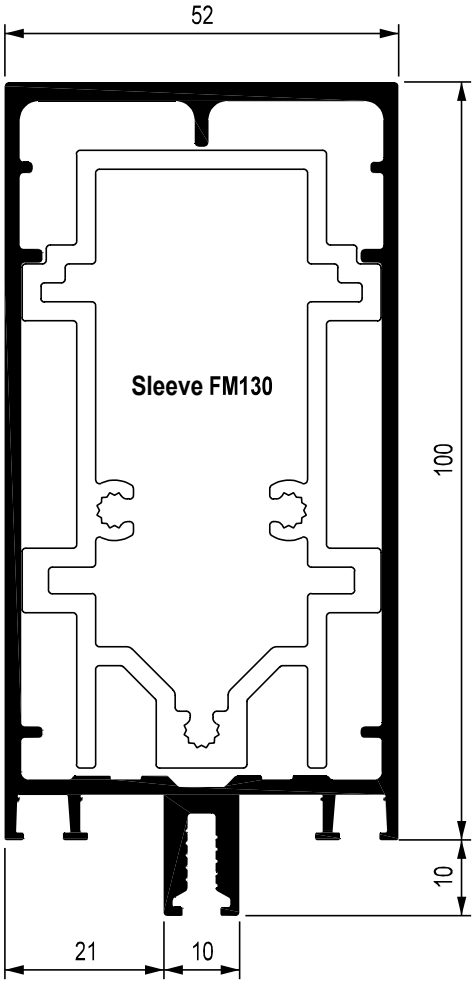
FM253

geffc120

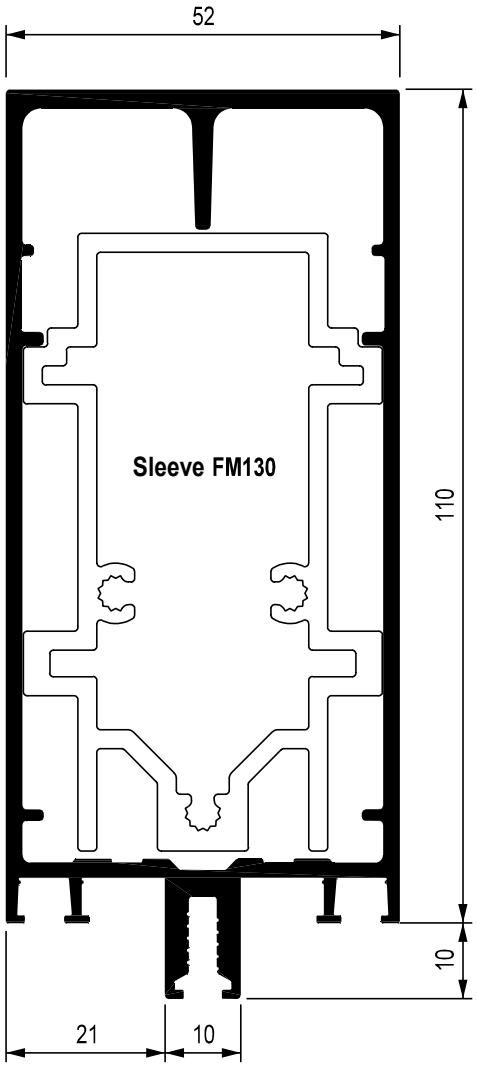
TECHNAL®

Profile summary

Mullion/transom profiles



FM169

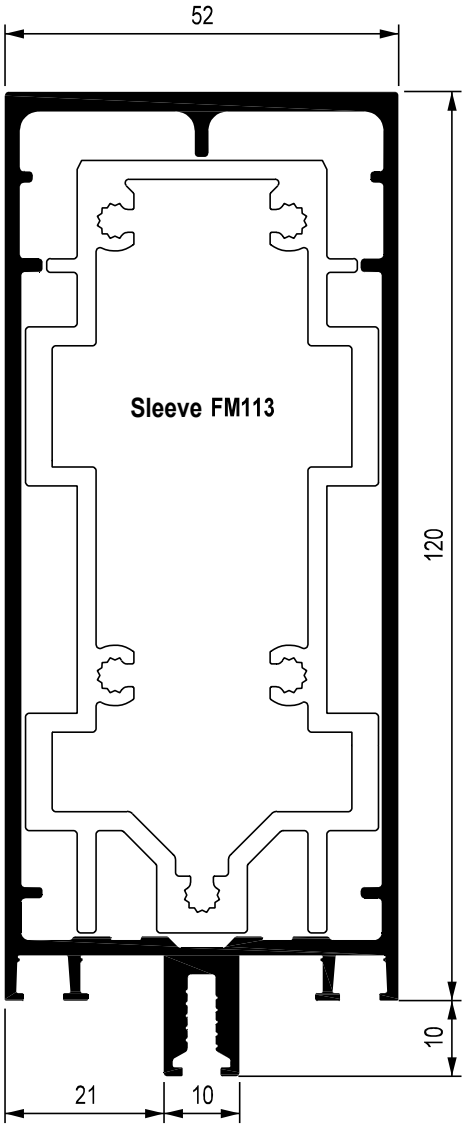


FM254

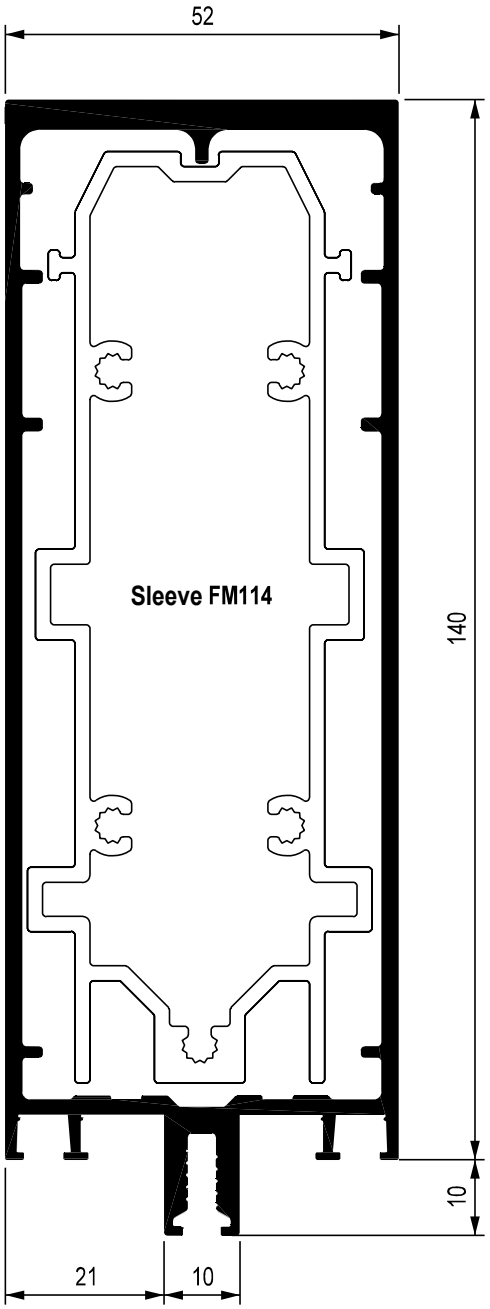
geffc121

Profile summary

Mullion/transom profiles



FM157



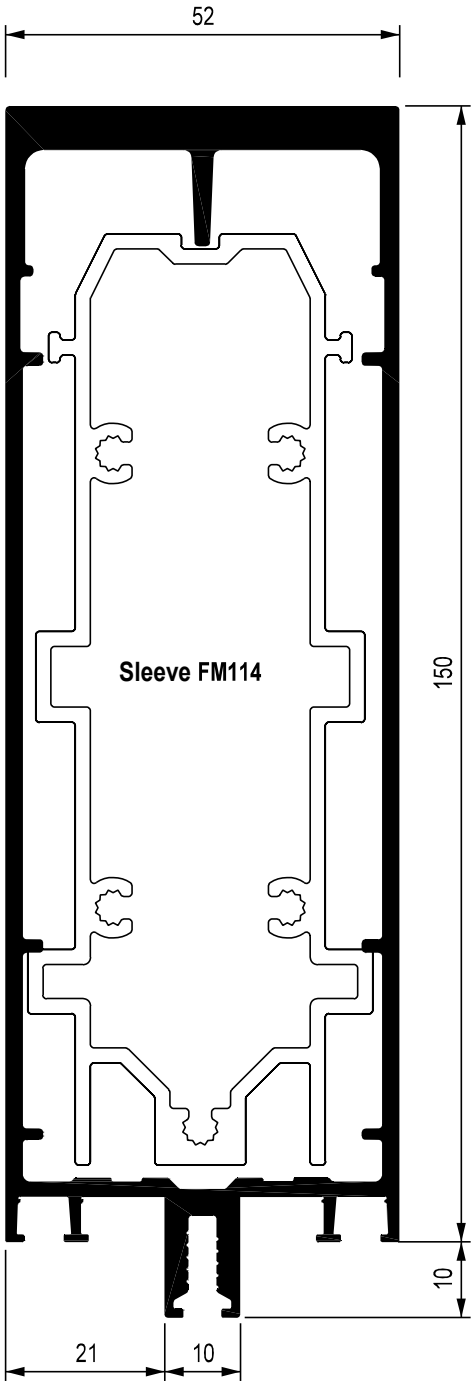
FM158

geffc122

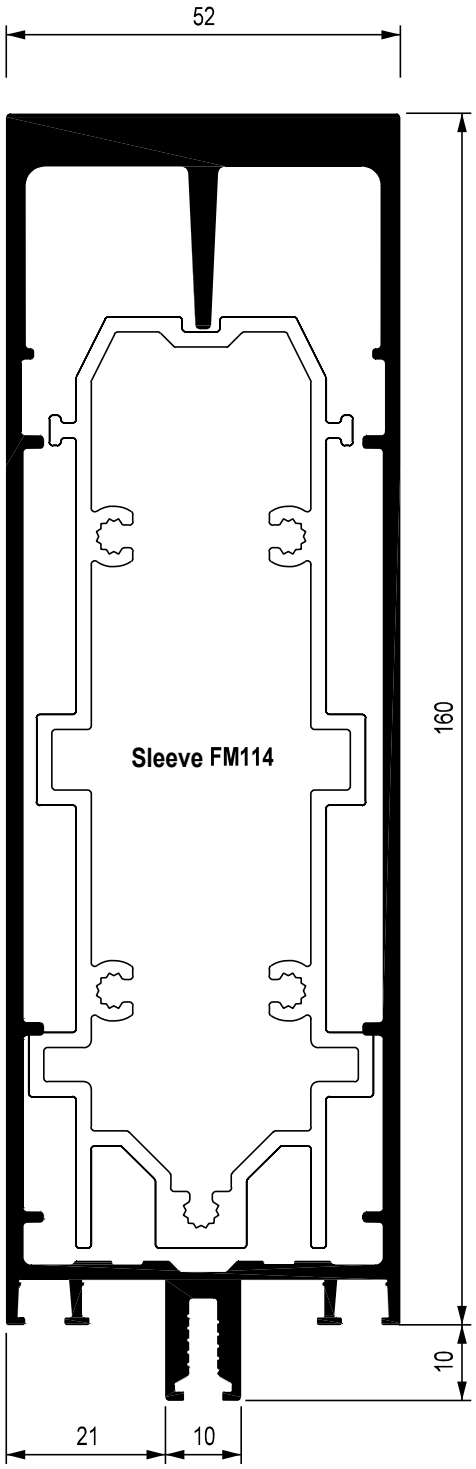
TECHNAL®

Profile summary

Mullion/transom profiles



FM255

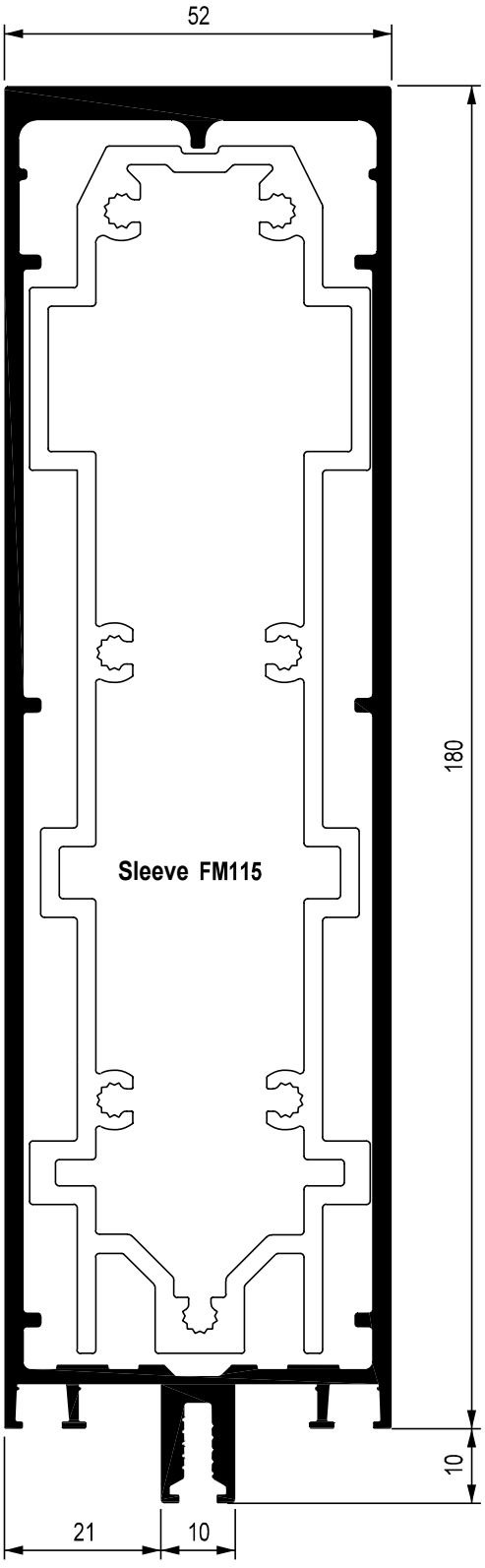


FM256

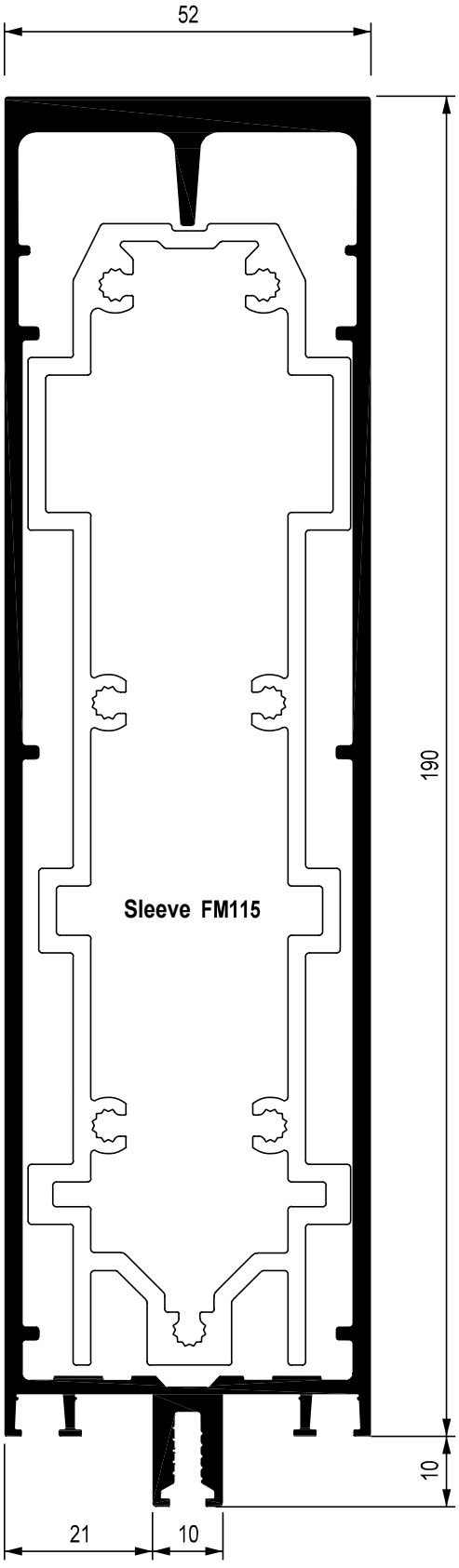
geffc123

Profile summary

Mullion/transom profiles



FM159



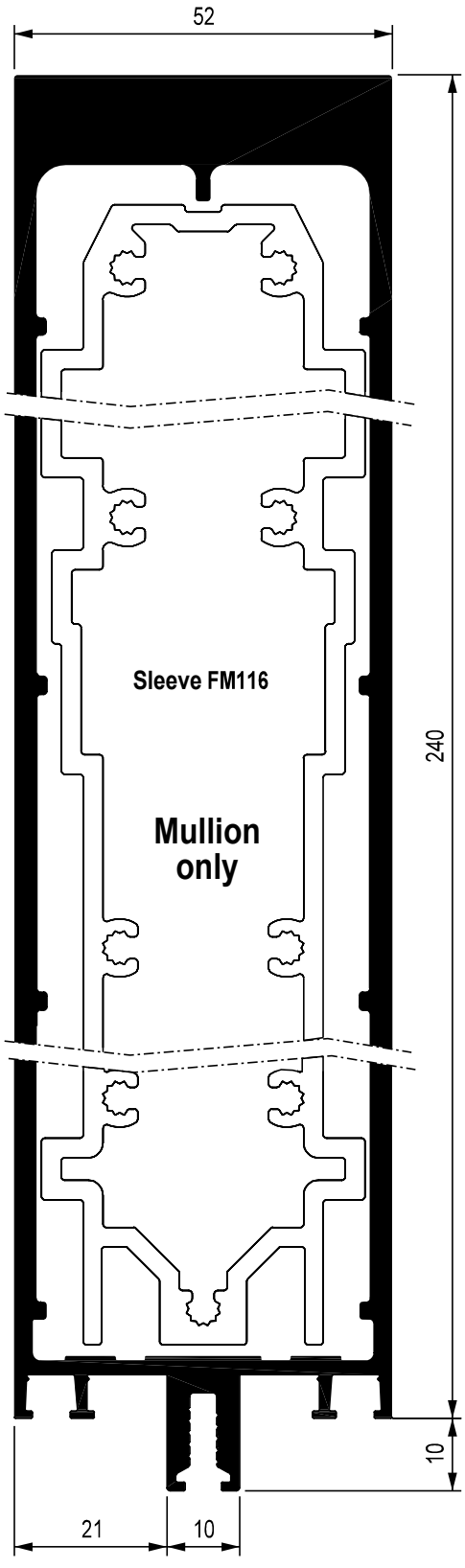
FM257

geffc124

TECHNAL®

Profile summary

Mullion/transom profiles

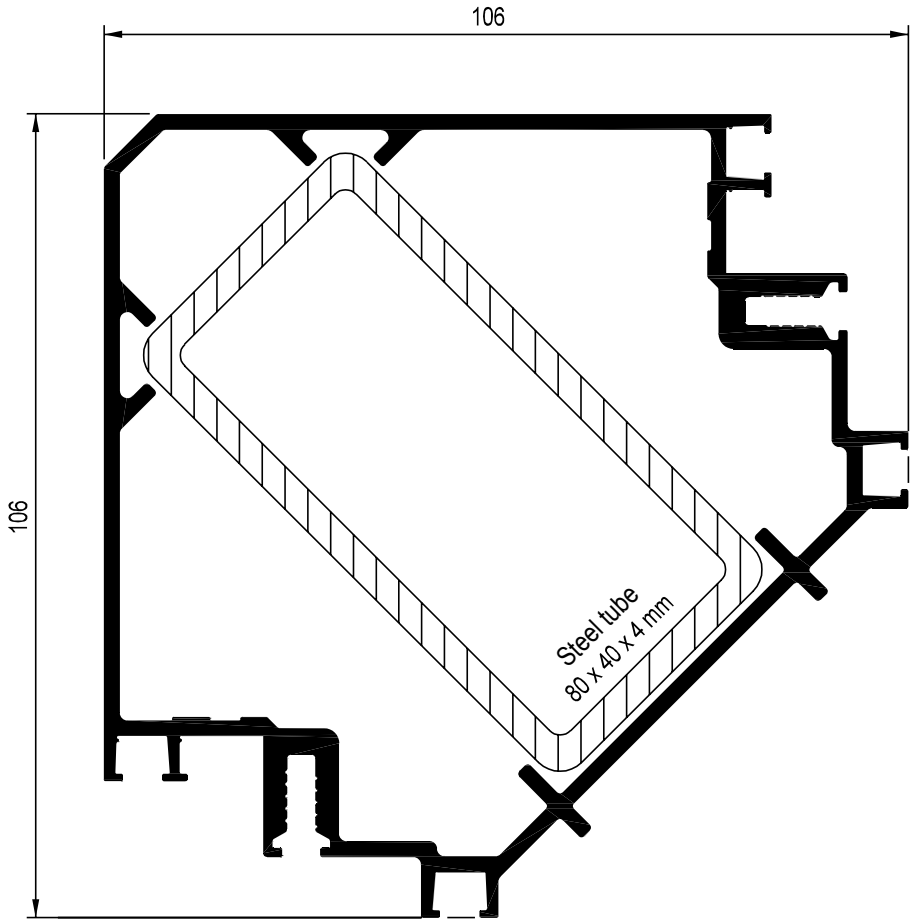


FM160

geffc125

Profile summary

Corner post



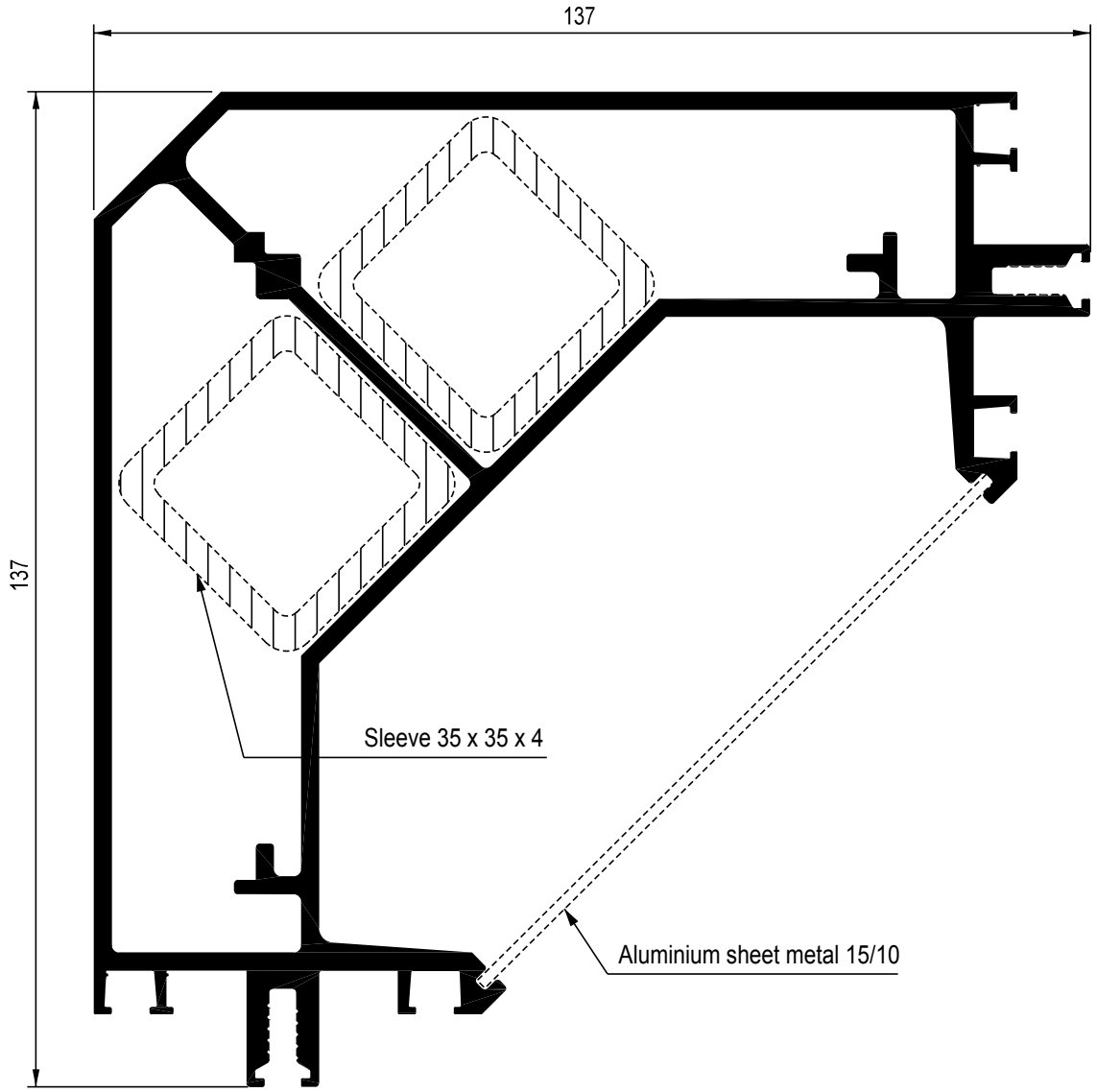
FM096

geffc126

TECHNAL®

Profile summary

Mullion/transom profiles

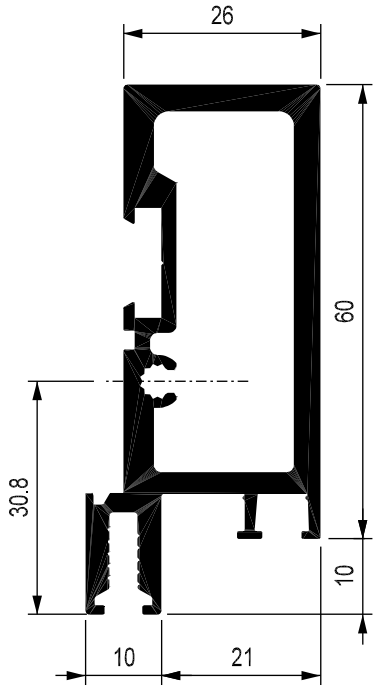


FM017

geffc127

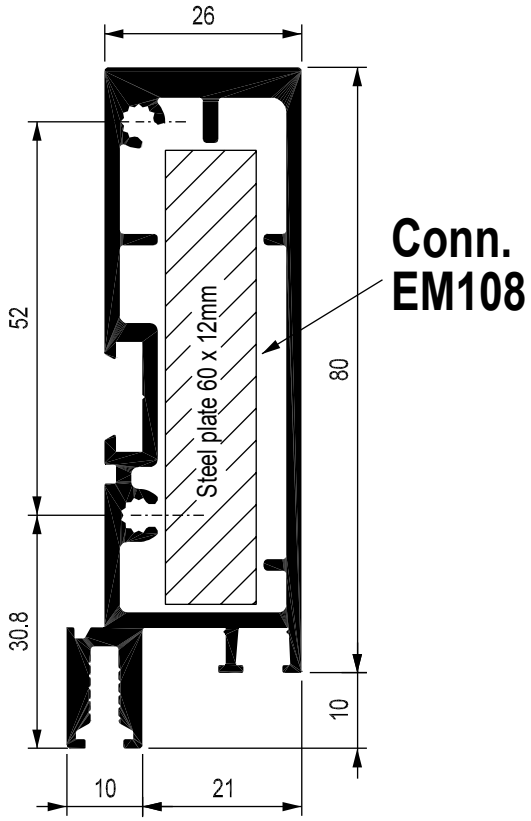
Profile summary

Half-mullion and transom profiles



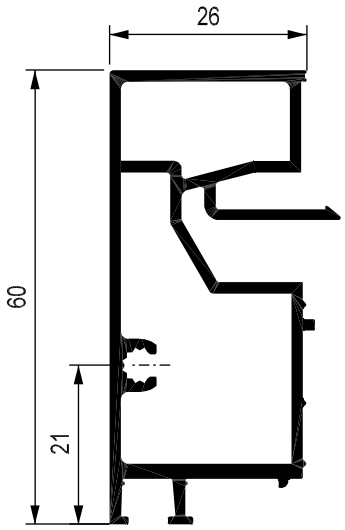
FM261

Screw securing only

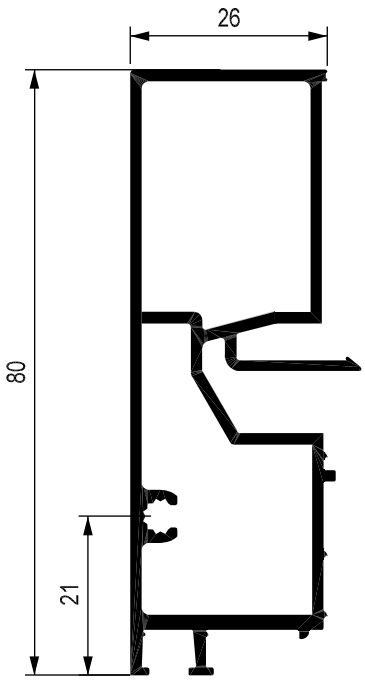


FM262

Groove section restoration



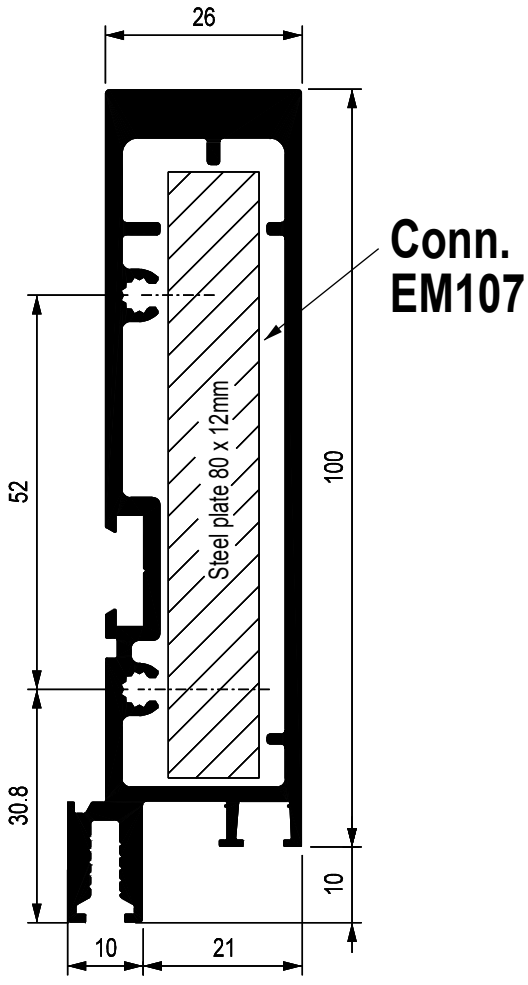
FM265



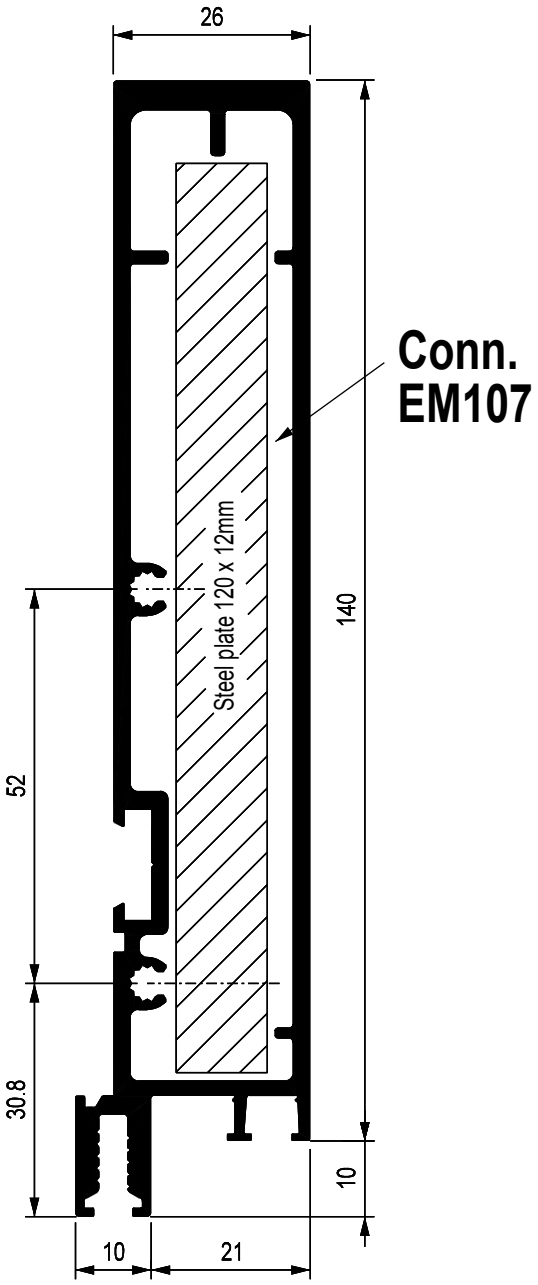
FM266

geffc128

TECHNAL®



FM264

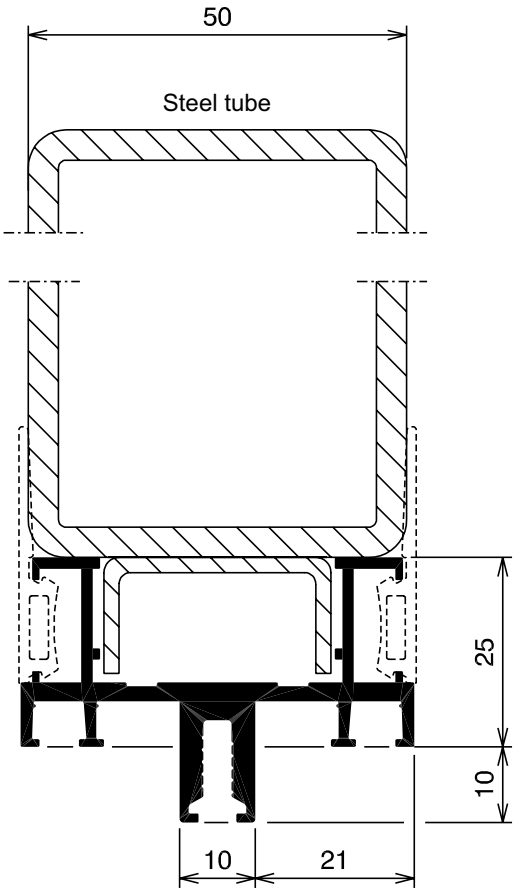


FM263

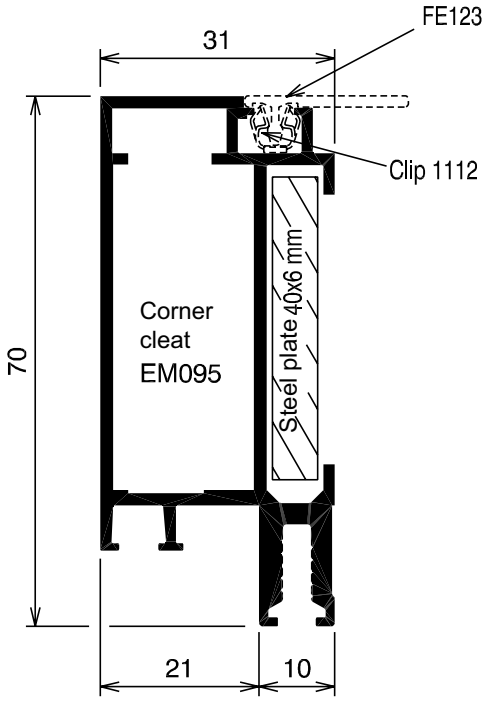
geffc129

Profile summary

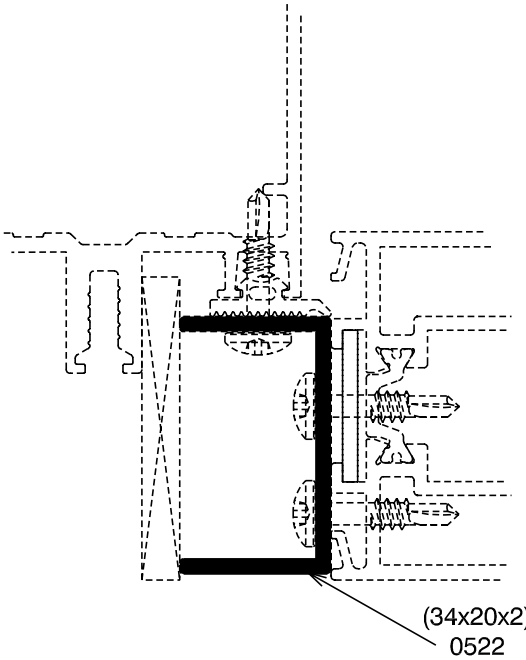
Miscallaneous profiles

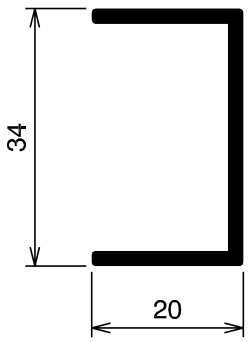


FM008



FM046



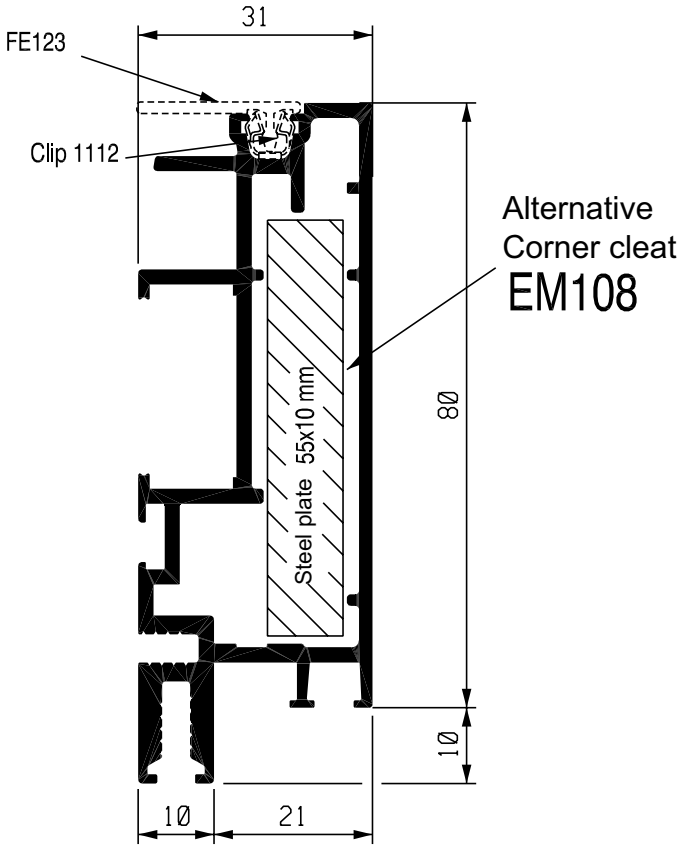


0522

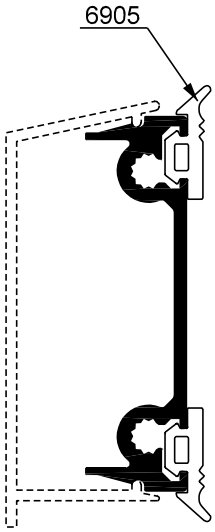
TECHNAL®

Profile summary

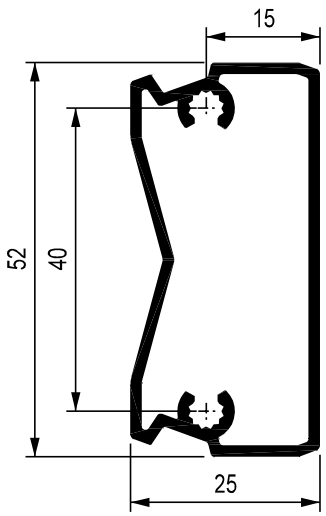
Miscallaneous profiles



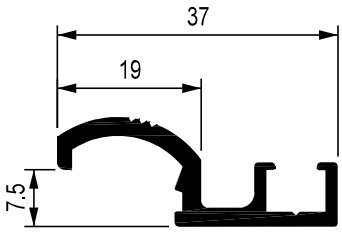
FM224



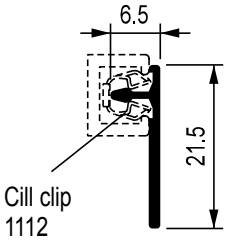
FM244



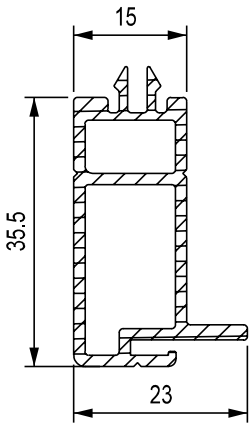
FM137
Internal transom



FM016



FE123



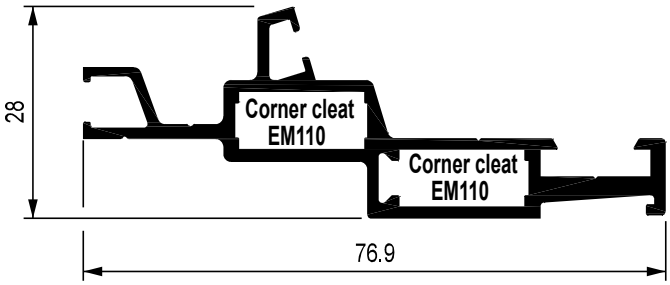
YM005
white PVC

geffc137

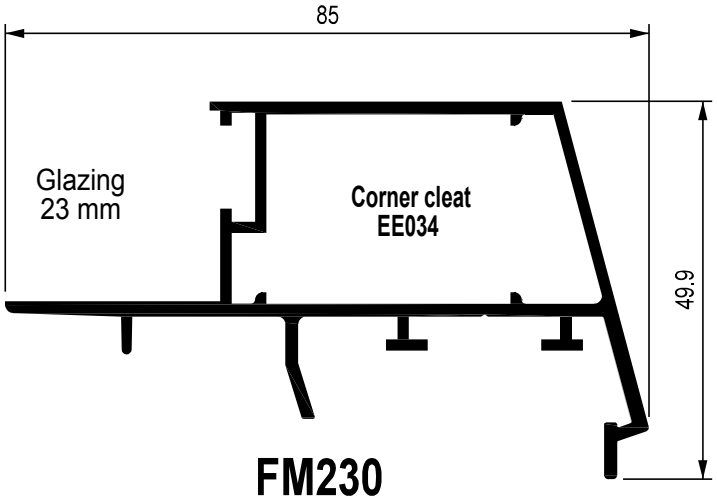
TECHNAL®

Profile summary

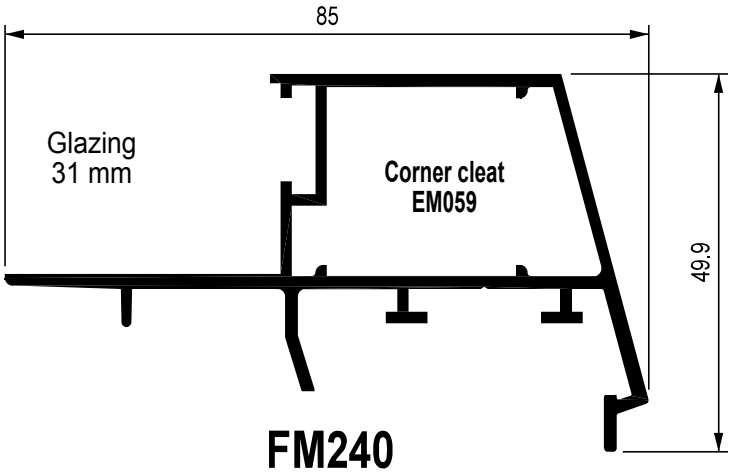
Tilt-and-turn fixed frames and vent profiles



FM267



FM230

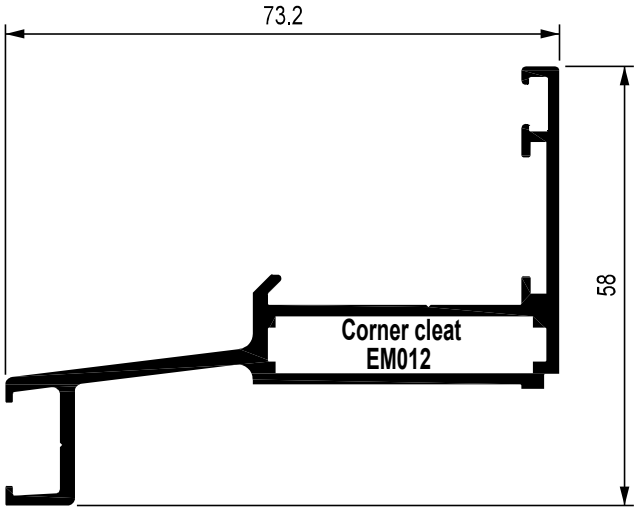


FM240

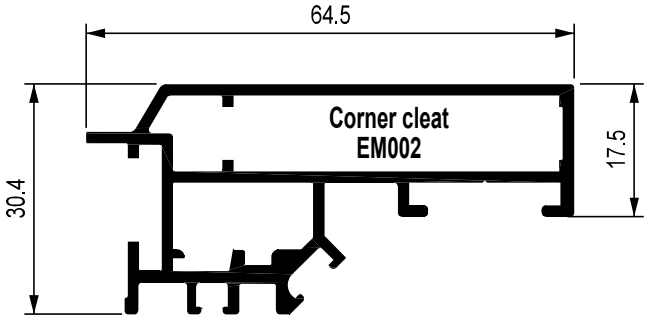
geffc130

Profile summary

Top-hung fixed frames and vent profiles

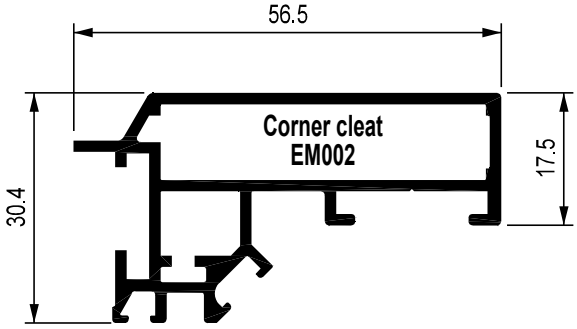


FM233



Glazing
23 mm

FM231



Glazing
31 mm

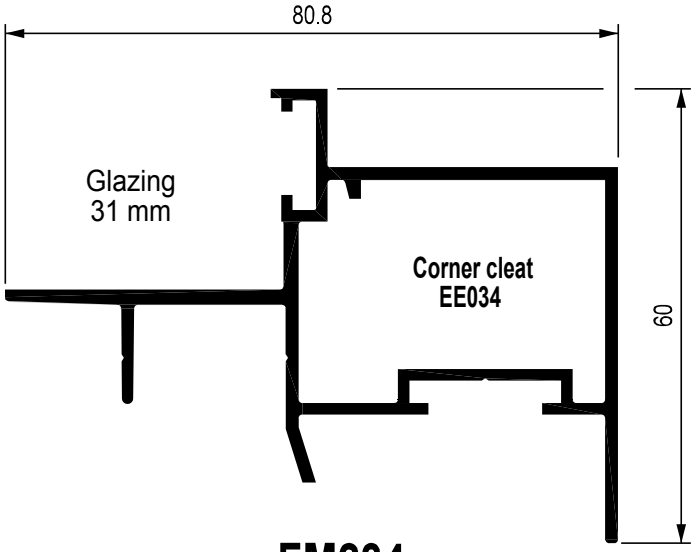
FM232

geffc131

TECHNAL®

Profile summary

Fire access profile

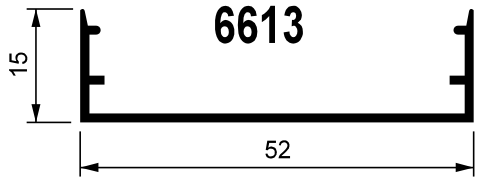


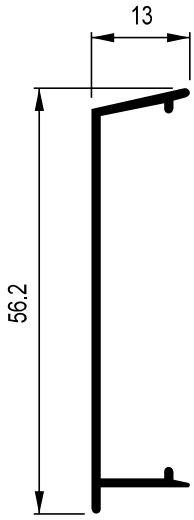
FM234

geffc132

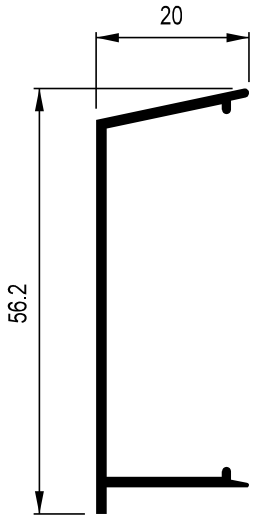
Profile summary

Caps

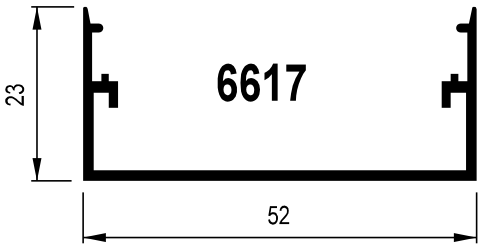


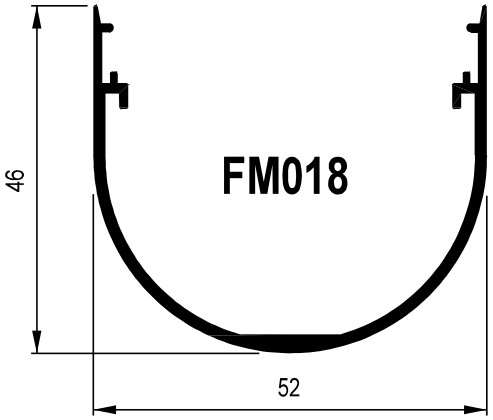


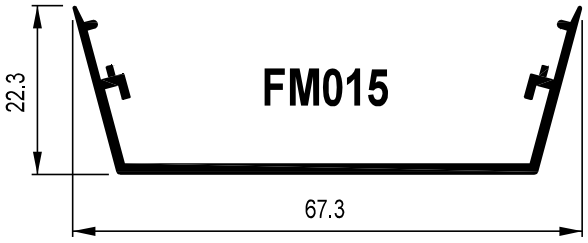
6614

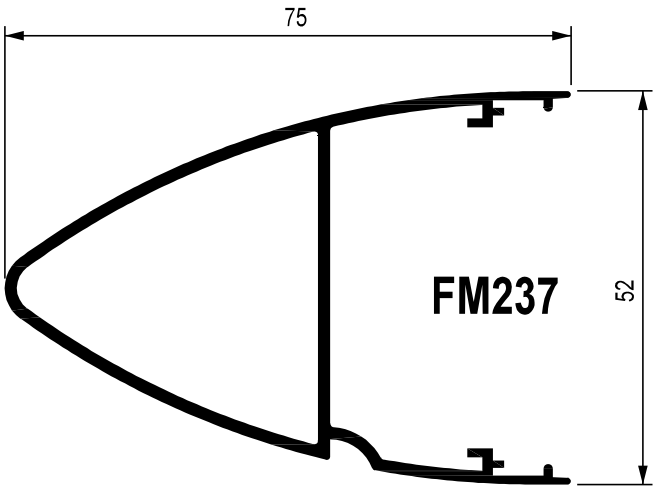


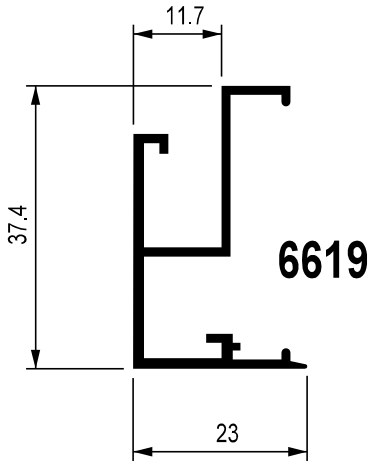
6667









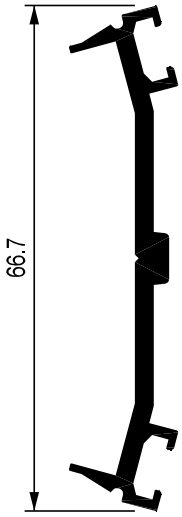


geffc133

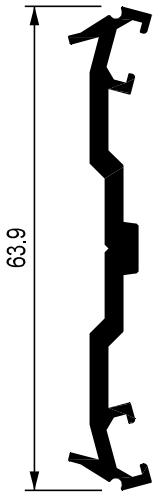
TECHNAL®

Profile summary

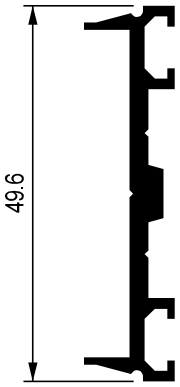
Pressure plates



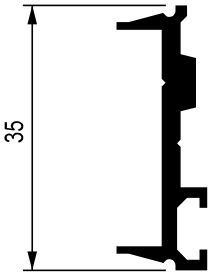
FM270
Pre-drilled



FM271
Pre-drilled

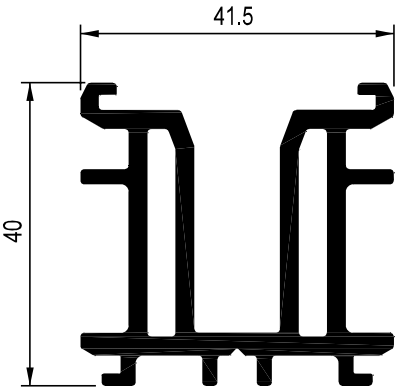


FM221
Pre-drilled

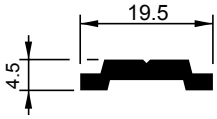


FM272
Pre-drilled

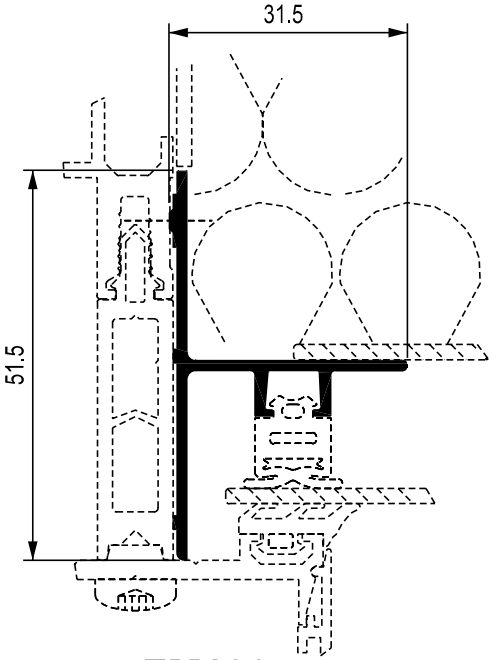
Miscallaneous profiles



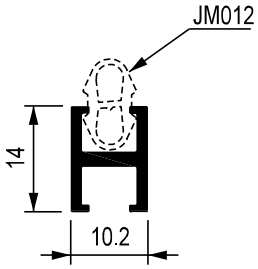
FM093



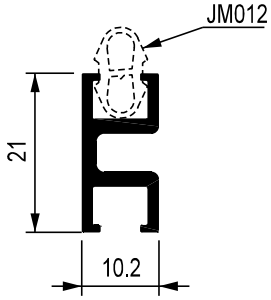
FM060



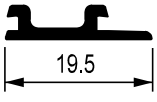
FM122



FM032



FM243

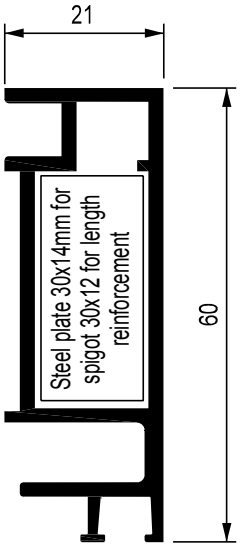


FM220

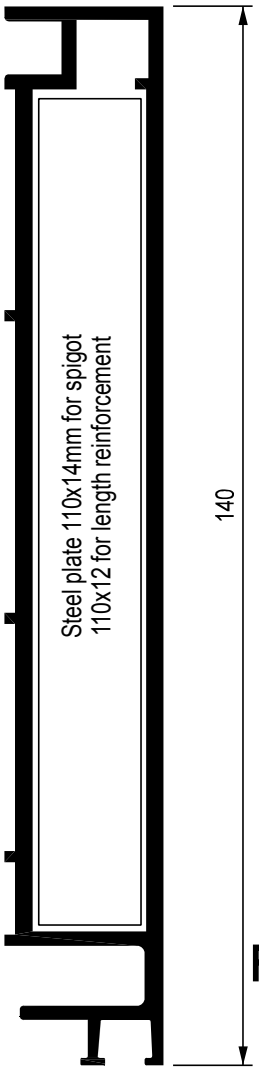
geffc134

Profile summary

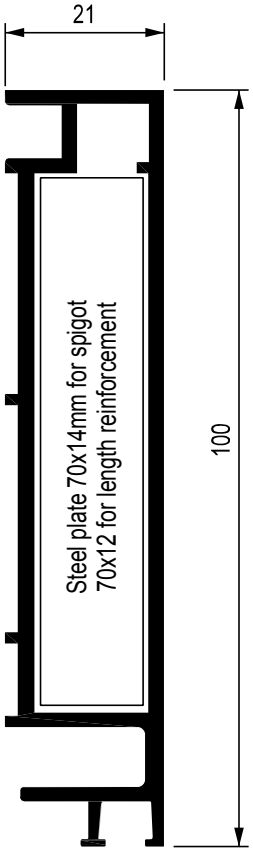
Expansion profiles



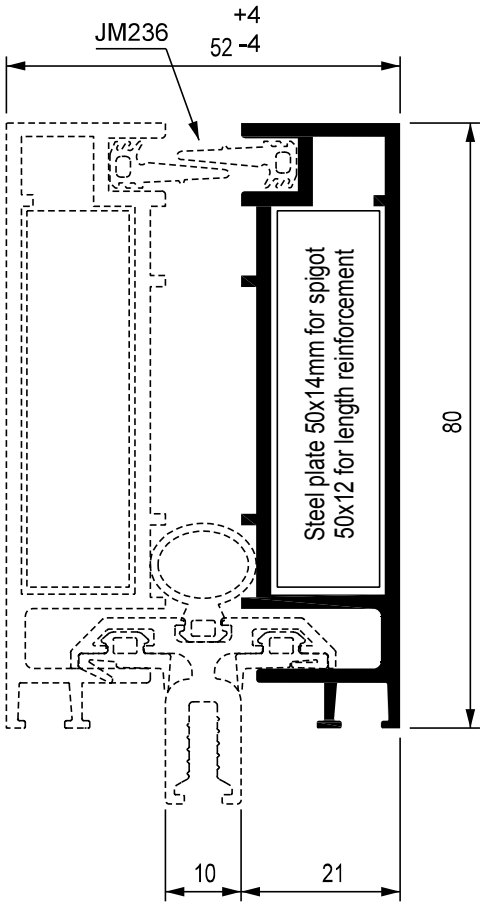
FM245



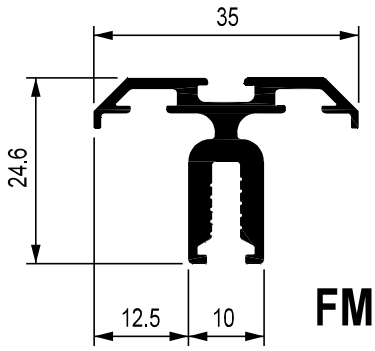
FM248



FM247



FM246



FM249

geffc136

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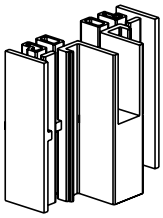
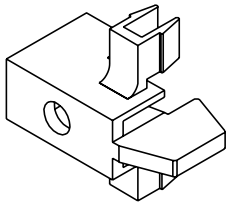
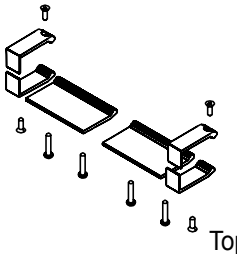
Accessory summary



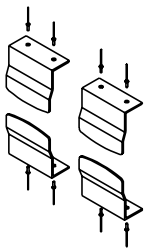
CM013 Mullion connector plug



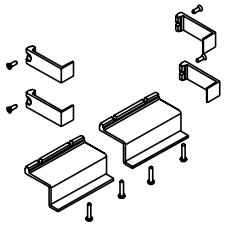
CM014 Connector plug for side mounting



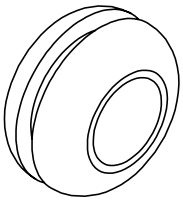
CM020 Top-hung security part



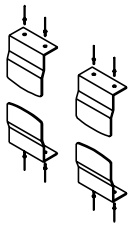
CM021 Tilt-and-turn security part



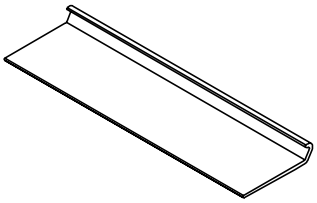
CM022 Top-hung security part



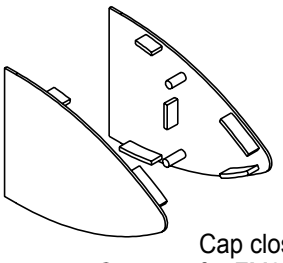
CM023 Finishing plug Ø 10



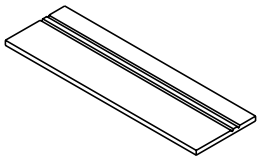
CM024 Fire access safety part



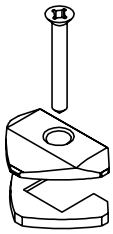
CM026 Glazing block support



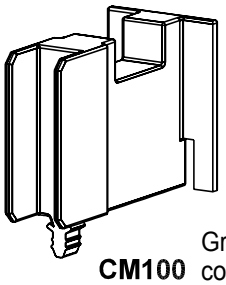
CM027 Cap closer for FM237



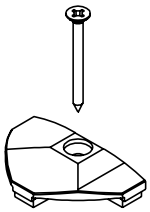
CM028 SSG Glazing wedge



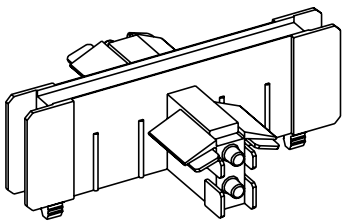
CM078 Pressure security piece



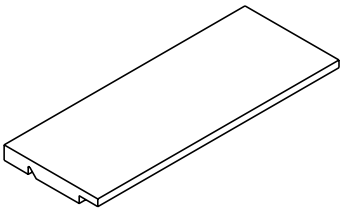
CM100 Grid effect connector plug



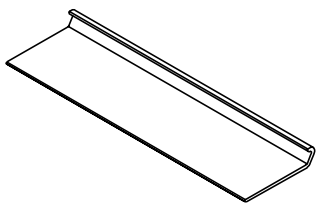
CM139 Pressure security piece



CM140 Connector plug

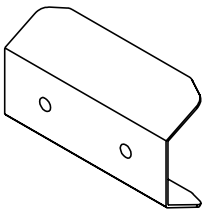


CM187 Glazing wedge for edged vent

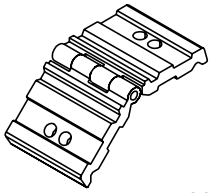


CM226 Glazing block support

geffc138

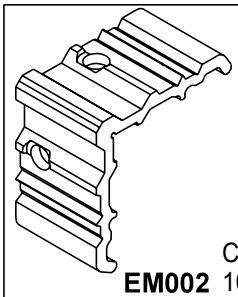


CM628 Sleeves for FM237 caps

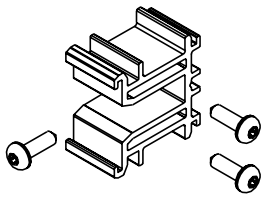


EE115 Variable angle corner cleat

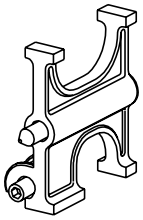
Accessory summary



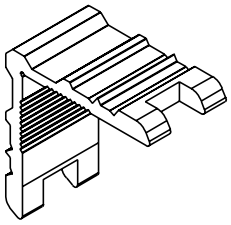
EM002 Crimp corner cleat 10 x 43



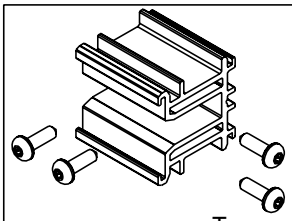
EM008 Mullion side mounting connector 40mm and 50mm



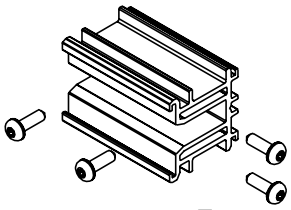
EM009 Anti Rotation Spigot



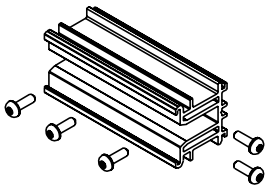
EM012 Crimp corner cleat 7.5 x 34



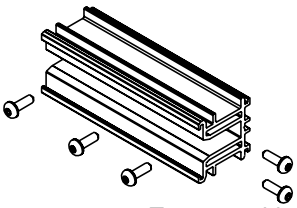
EM014 Transom side mounting connector 60mm



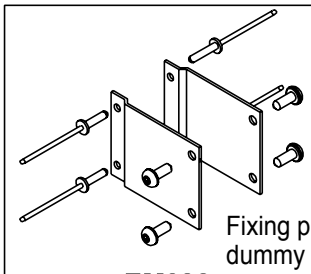
EM015 Transom side mounting connector 80mm and 90mm



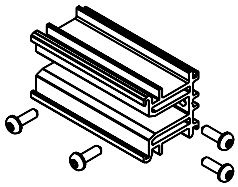
EM016 Transom side mounting connector 120mm



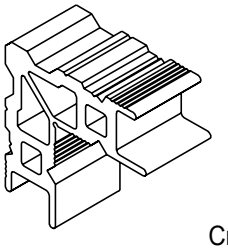
EM017 Transom side mounting connector 140mm, 150mm, 160mm



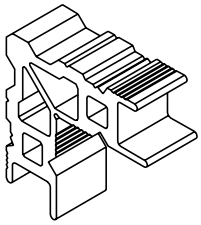
EM032 Fixing plate for dummy outer transom (top-hung)



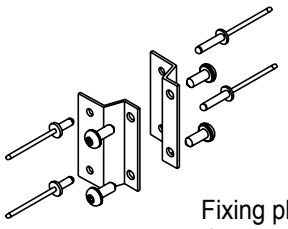
EM033 Transom side mounting connector 100mm and 110mm



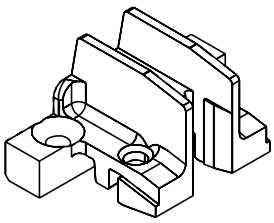
EE034 Crimp corner cleat 25 x 32.2



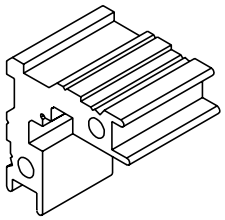
EM059 Crimp corner cleat 25 x 25



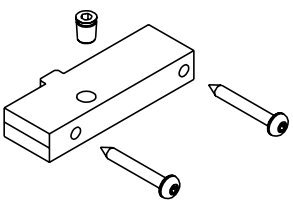
EM060 Fixing plate for dummy outer transom (tilt/turn)



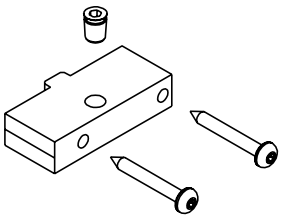
EM070 Face mounting junction



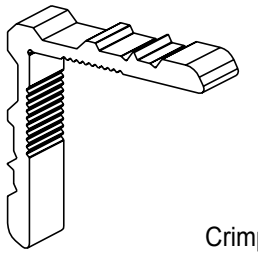
EM095 Crimp corner cleat 18.6 x 43



geffc139 **EM107** Connector for FM263 FM264



EM108 Connector for FM262



EM110 Crimp corner cleat 7.5 x 16.5

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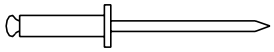
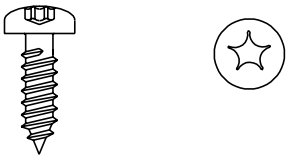
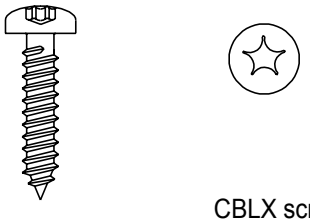
Accessory summary



EM143 Pop rivet for cap fixing



VE101 CBLX screw ST 4.8 x 16 C footprint 20

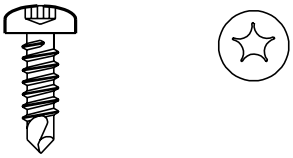


VE102 CBLX screw ST 4.8 x 22 C footprint 20

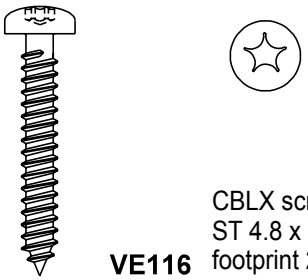
VE103 CBLX type 2 screw ST 4.8 x 9.5 C footprint 20

VE106 FX screw ST 4.8 x 16 C footprint 20

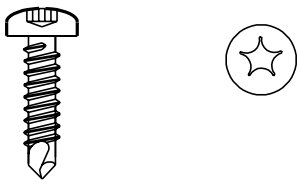
VE108 CBLX screw ST 4.8 x 13 C footprint 20



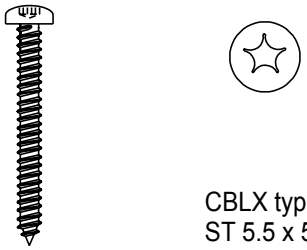
VE109 CBLX self-tapping screw ST 4.8 x 16 footprint 20



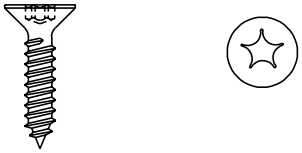
VE116 CBLX screw ST 4.8 x 32 C footprint 20



VE177 CBLX self-tapping screw ST 4.8 x 19 footprint 20



VM030 CBLX type 2 screw ST 5.5 x 50 C footprint 25

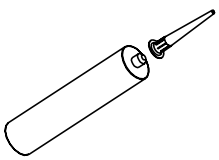


VM034 FX screw ST 4.8 x 19 C footprint 25

W200 Cyanocryalate adhesive

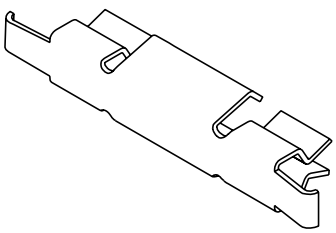
W201 Dual component Alu/Alu adhesive

W202 Weatherproofing glue for EPDM plugs



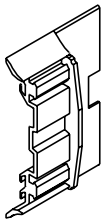
W110 Small joint sealant

W118 Solvent-free silicone sealant



geffc140

1112 Cill clip



6911 Pressure plug for FM221

W543 End seal SR2 footprint

Weather gasket summary

Top-hung Corner gasket **CM031**

Internal weather gasket

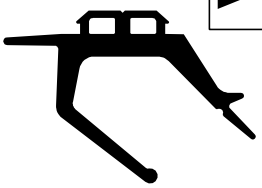
CM160

Angle gasket

CM163

4 angles w/JM161

CM166



Angle gasket

JM001

9mm internal gasket

JM004

11mm internal gasket

JM006

15mm internal gasket

JM007

13mm internal gasket

JM008

17mm internal gasket

JM009

14mm internal gasket

JM010

6mm internal gasket

JM012

Bead clip gasket

JM014

Top-hung rebate gasket

Parts to be removed

JM017

horizontal line mullion gasket

JM044

6mm Foam seal

JM051

Finishing gasket for FM008

JM081

12mm internal gasket

JM132

5mm internal gasket

geffc144

Linear gasket

Turning gasket for angles

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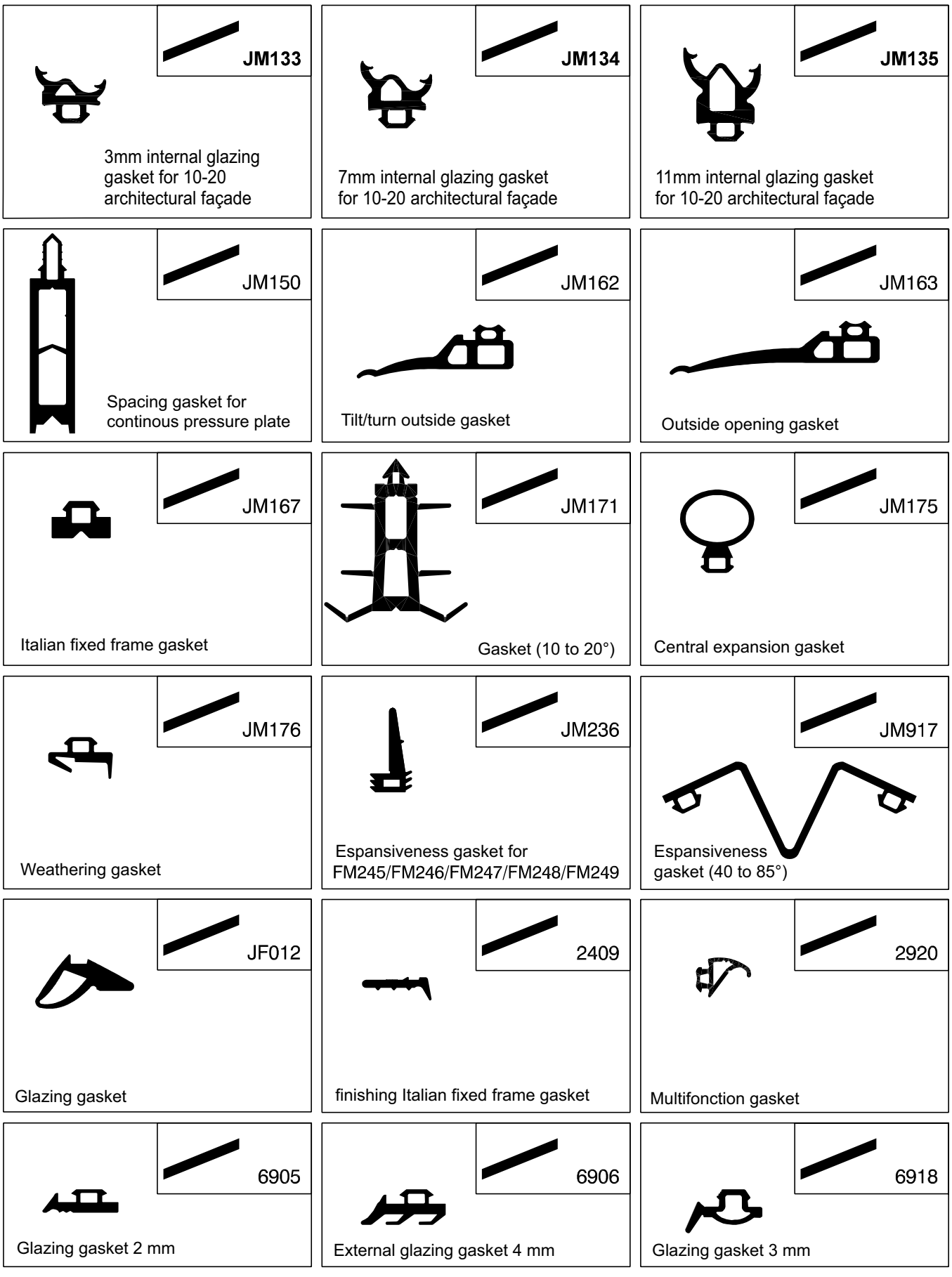
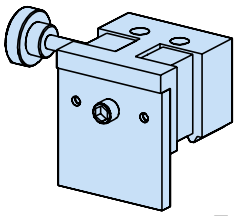
Weather gasket summary

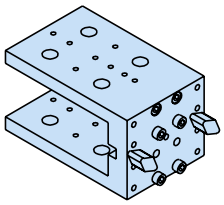


geffc145

Tool summary



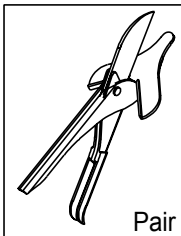
OM004 Template for side mounting



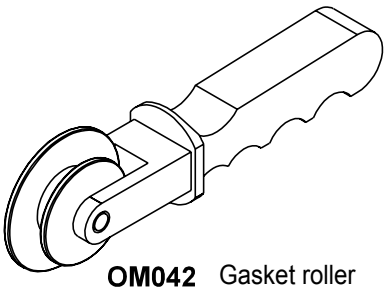
OM006 Drill jig for BG side mounting connector

OM137 Drill jig for top-hung 45 vent frame friction stays Top-hung vent profiles FM231-FM232

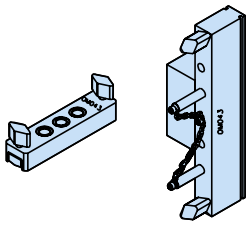
OM021 Stepped drill bit Ø 10 and Ø 5



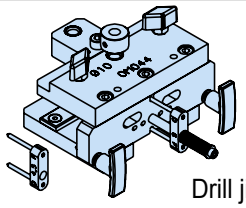
OM023 Pair of gasket scissors



OM042 Gasket roller



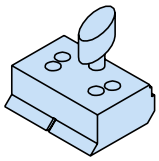
OM043 Embedded casement bolt template



Delivered with stepped drill bit

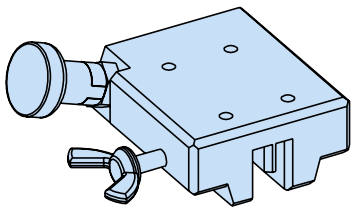
OM044 Drill jig for securing half-transoms FM261/ FM262/FM263/FM264 to half-mullions

OM047 Gasket cutting tool



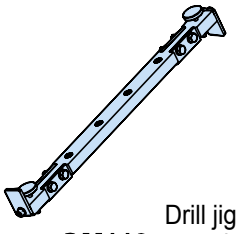
OM065 Drill jig for keeps and locking wedges Profile: FM233

OM066 Set of cutting wedges

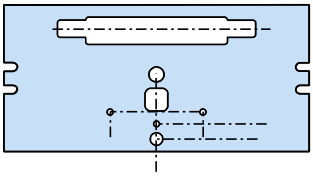


OM100 Tool for EM070 connector

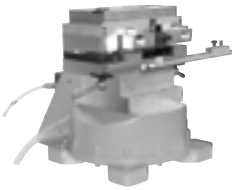
OM135 Drill jig for top-hung outer frame friction stays



OM113 Drill jig for top-hung security plates



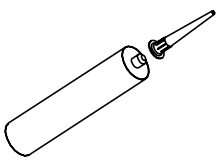
OM116 Fire access unit copy plate



OM118 Freestanding tool for pressure plate and cap drainage

OM119 Freestanding tool for vent machining

OM120 Freestanding tool for vent machining



W150 Butyl cartridge, black

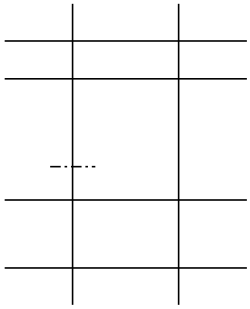
geffc148

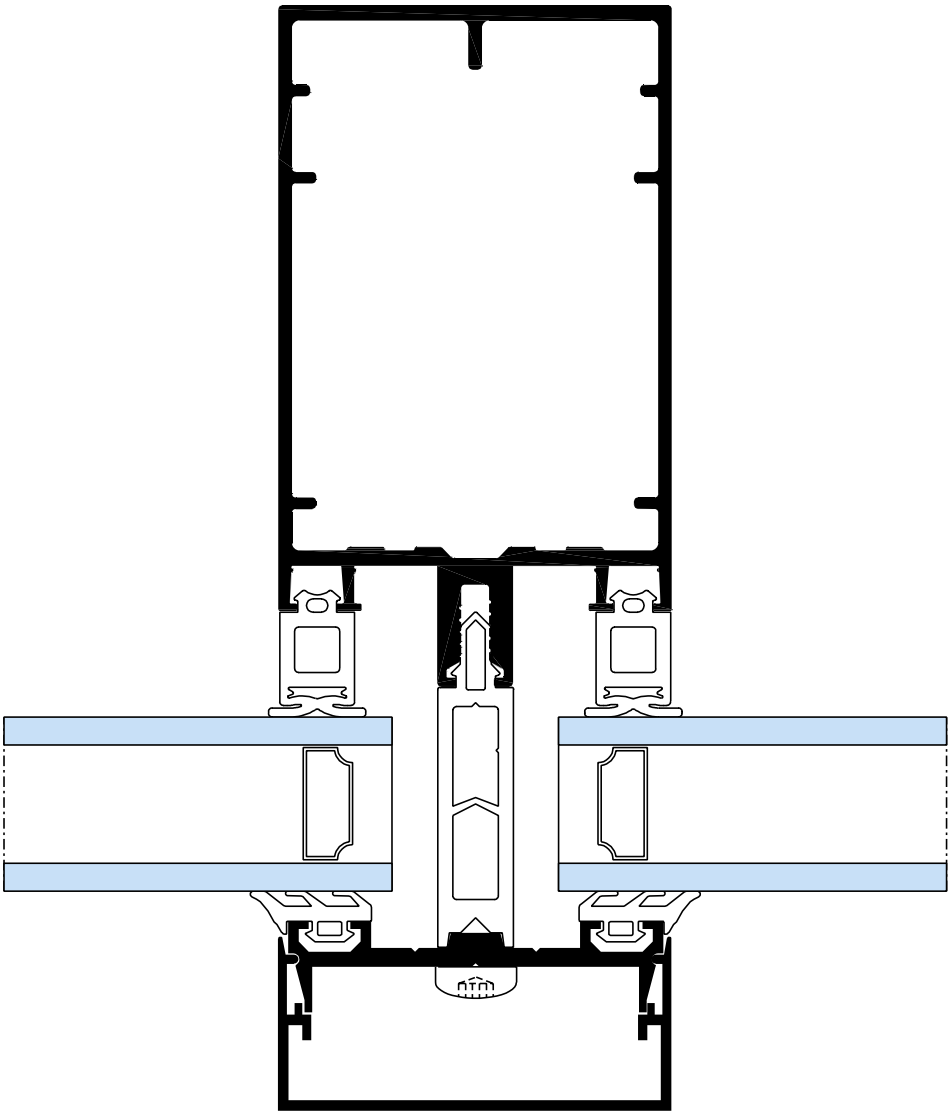
TECHNAL®

Node points (full-scale)

Grid effect fixed frame

■ Horizontal cross section

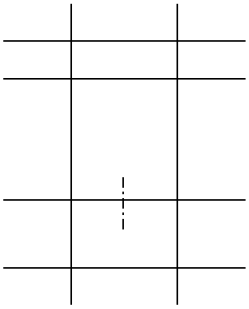


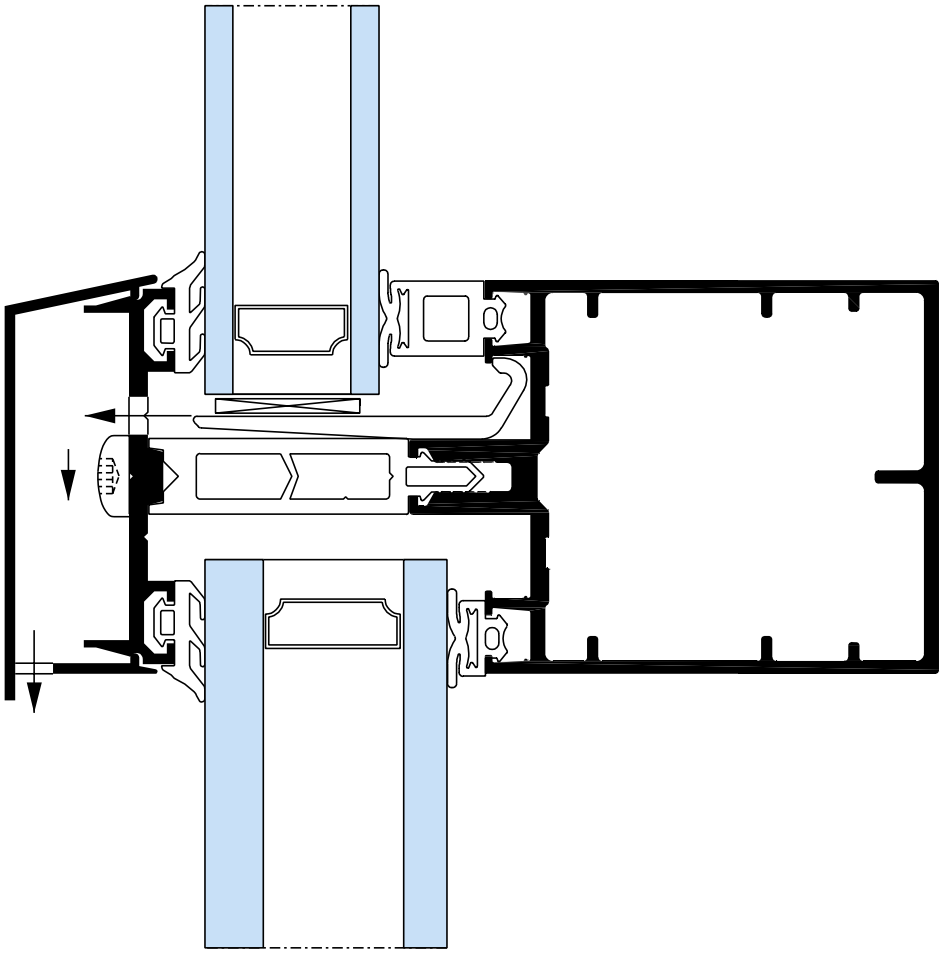


scale: 1/1

geffc041

Vertical cross section





scale: 1/1

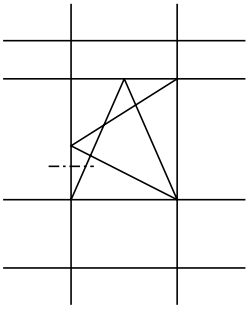
geffc042

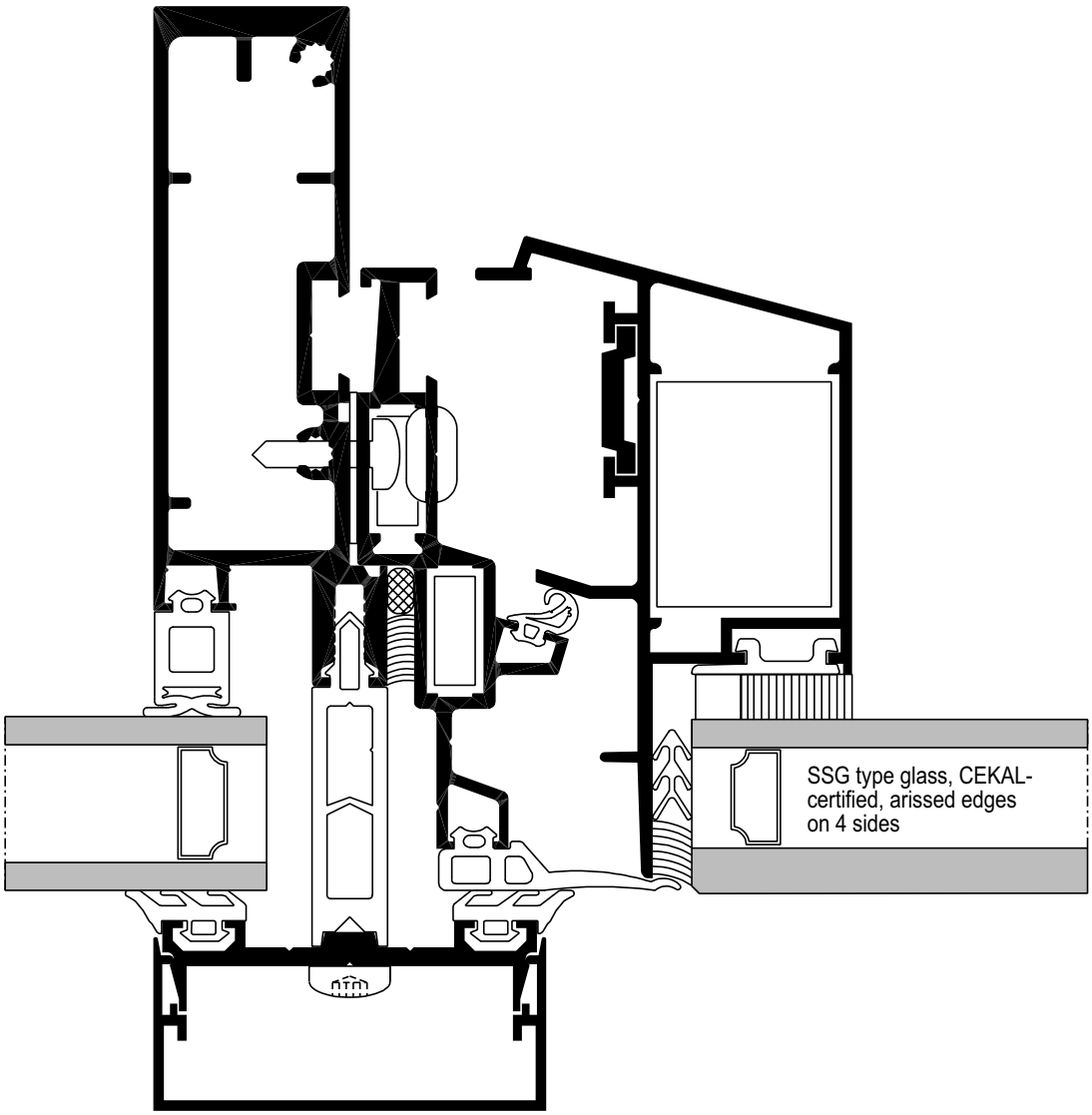
TECHNAL®

Node points (full-scale)

Grid effect tilt-and-turn, inward-opening, bottom-hung

■ Horizontal cross section

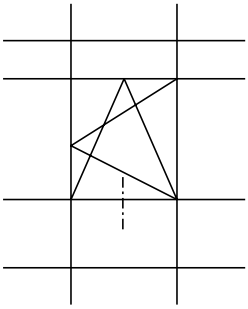


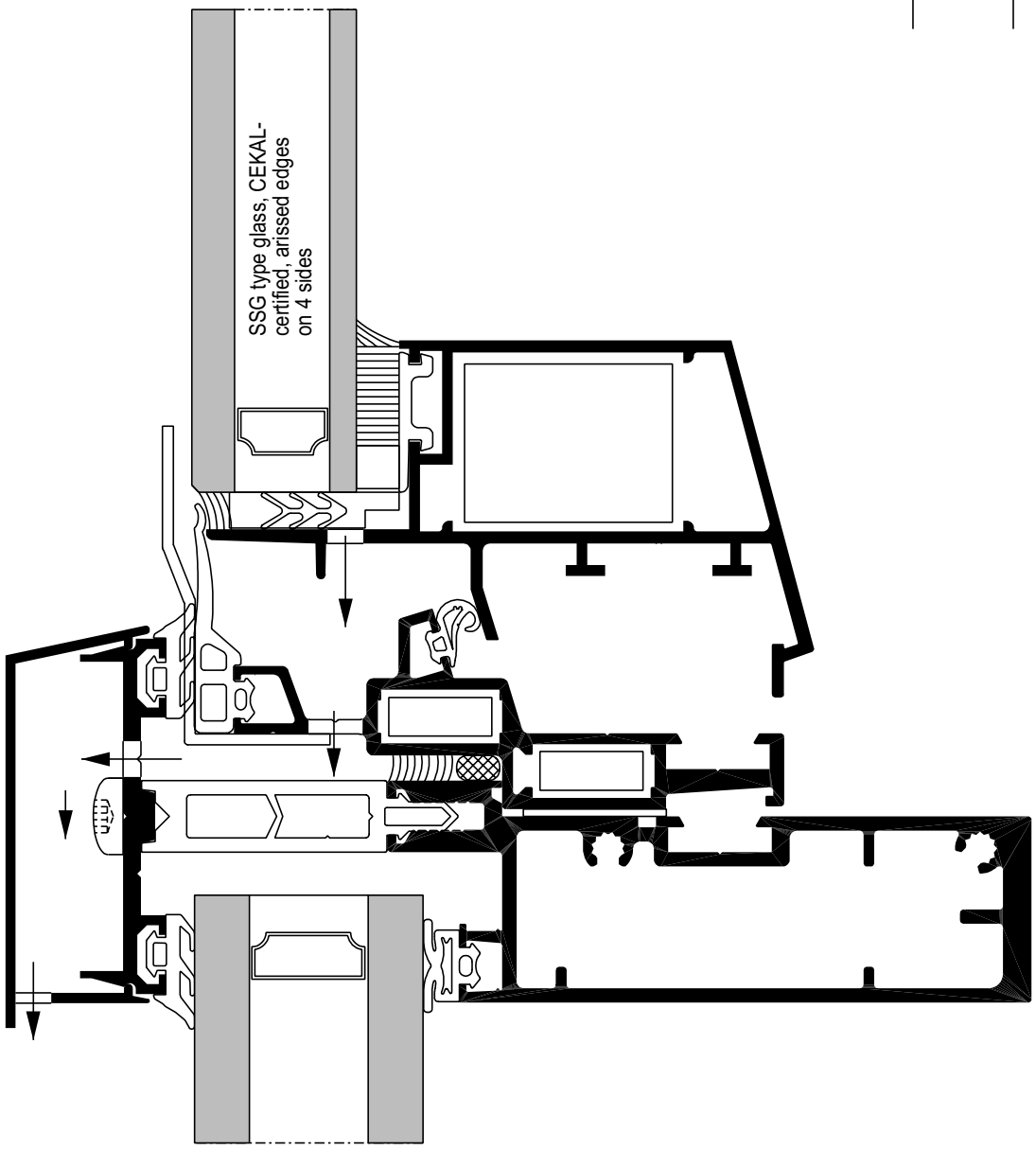


scale: 1/1

geffc053b

Vertical cross section





scale: 1/1

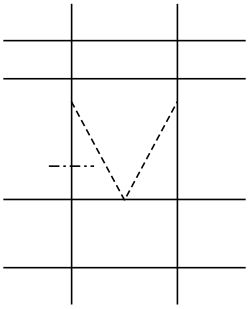
geffc054b

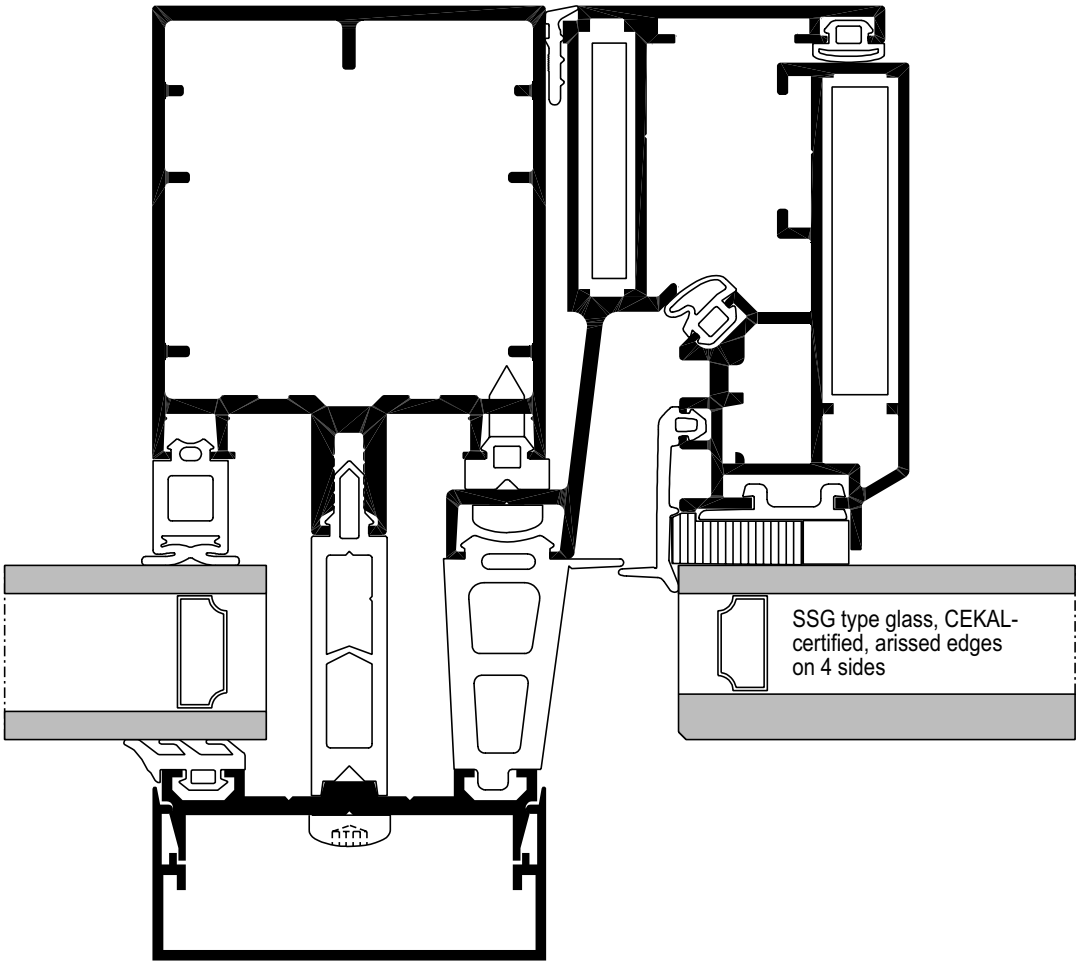
TECHNAL®

Node points (full-scale)

Grid effect top-hung

■ Horizontal cross section

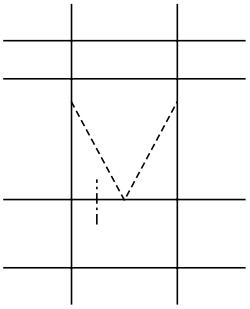


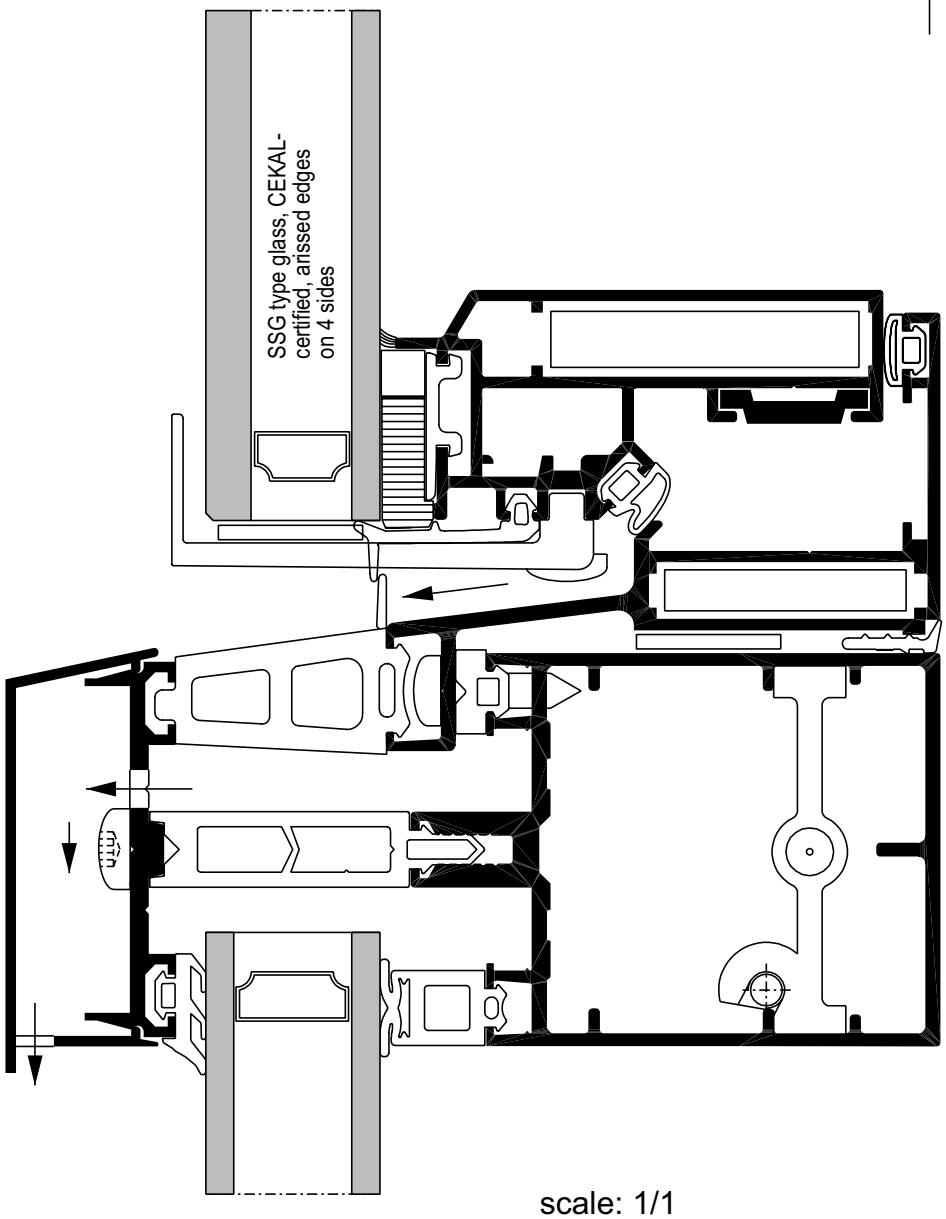


scale: 1/1

geffc057

Vertical cross section





scale: 1/1

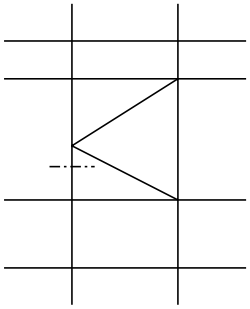
geffc058

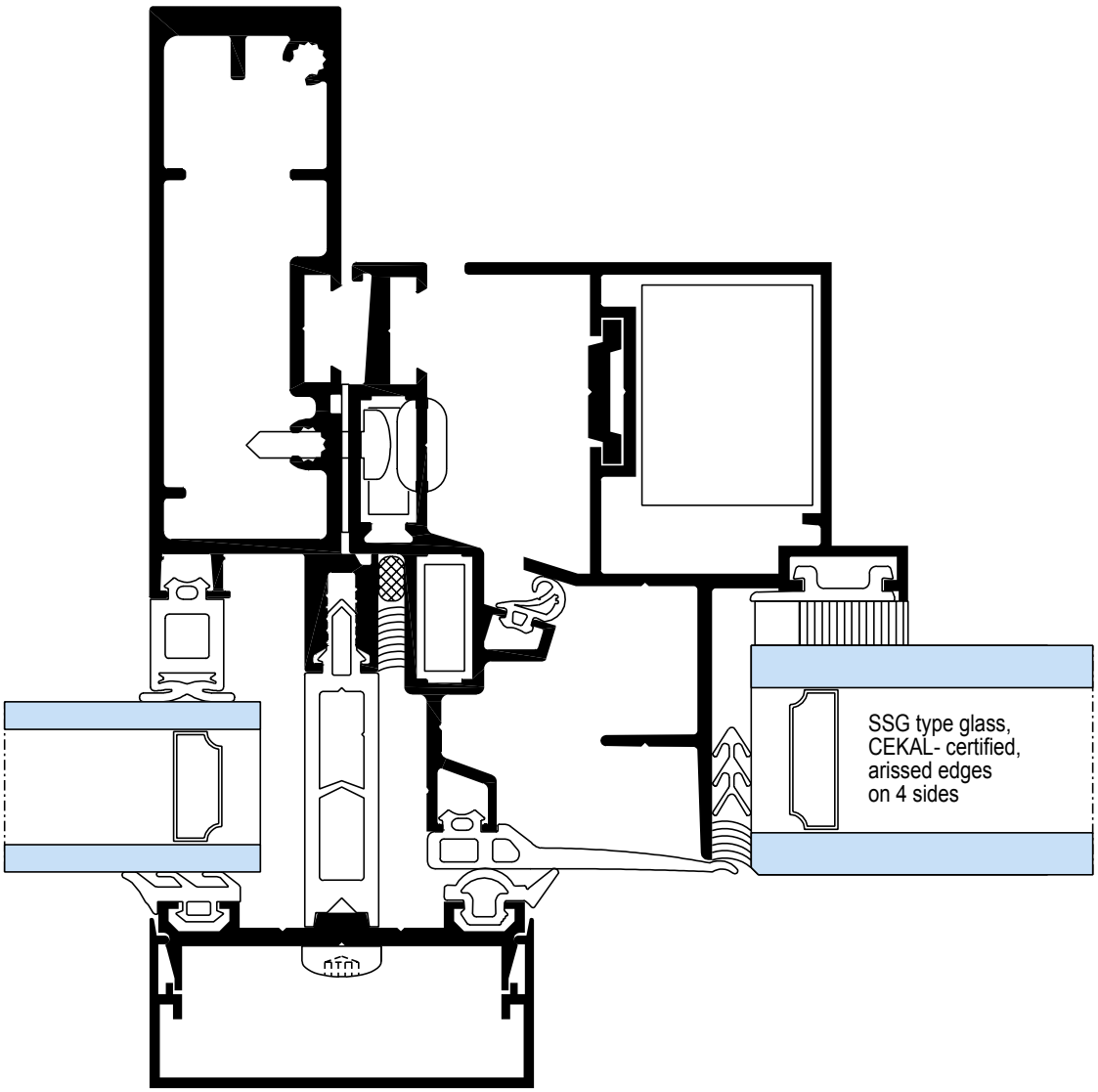
TECHNAL®

Node points (full-scale)

Grid effect fire access

■ Horizontal cross section

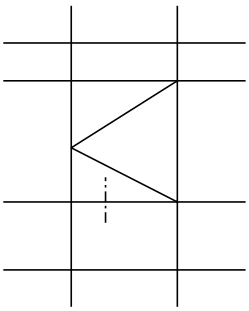


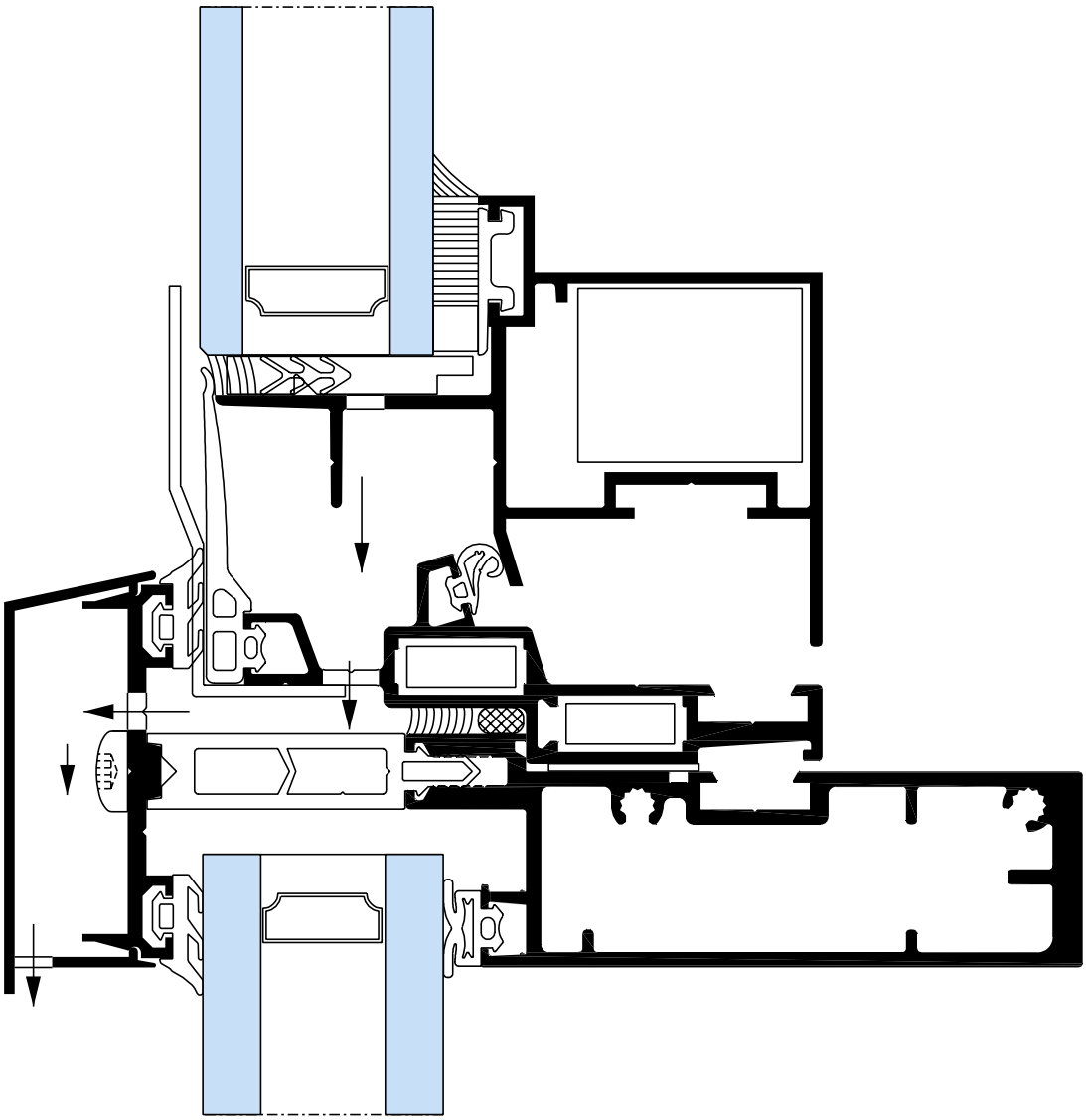


scale: 1/1

geffc061

Vertical cross section





scale: 1/1

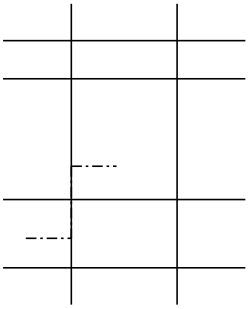
geffc062

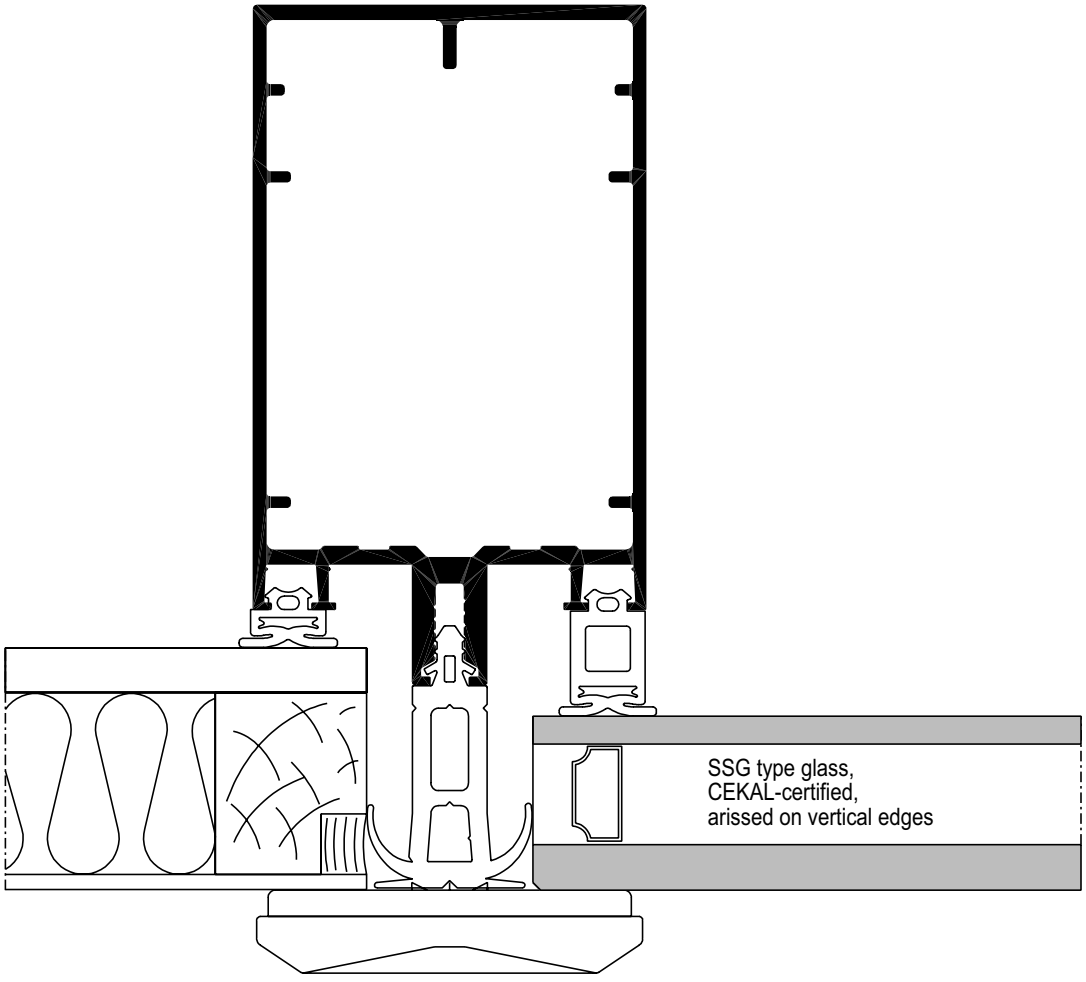
TECHNAL®

Node points (full-scale)

Horizontal line effect fixed frame

■ Horizontal cross section



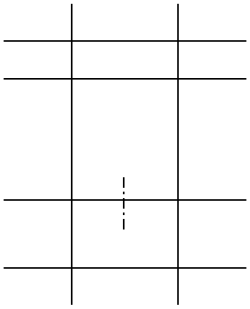


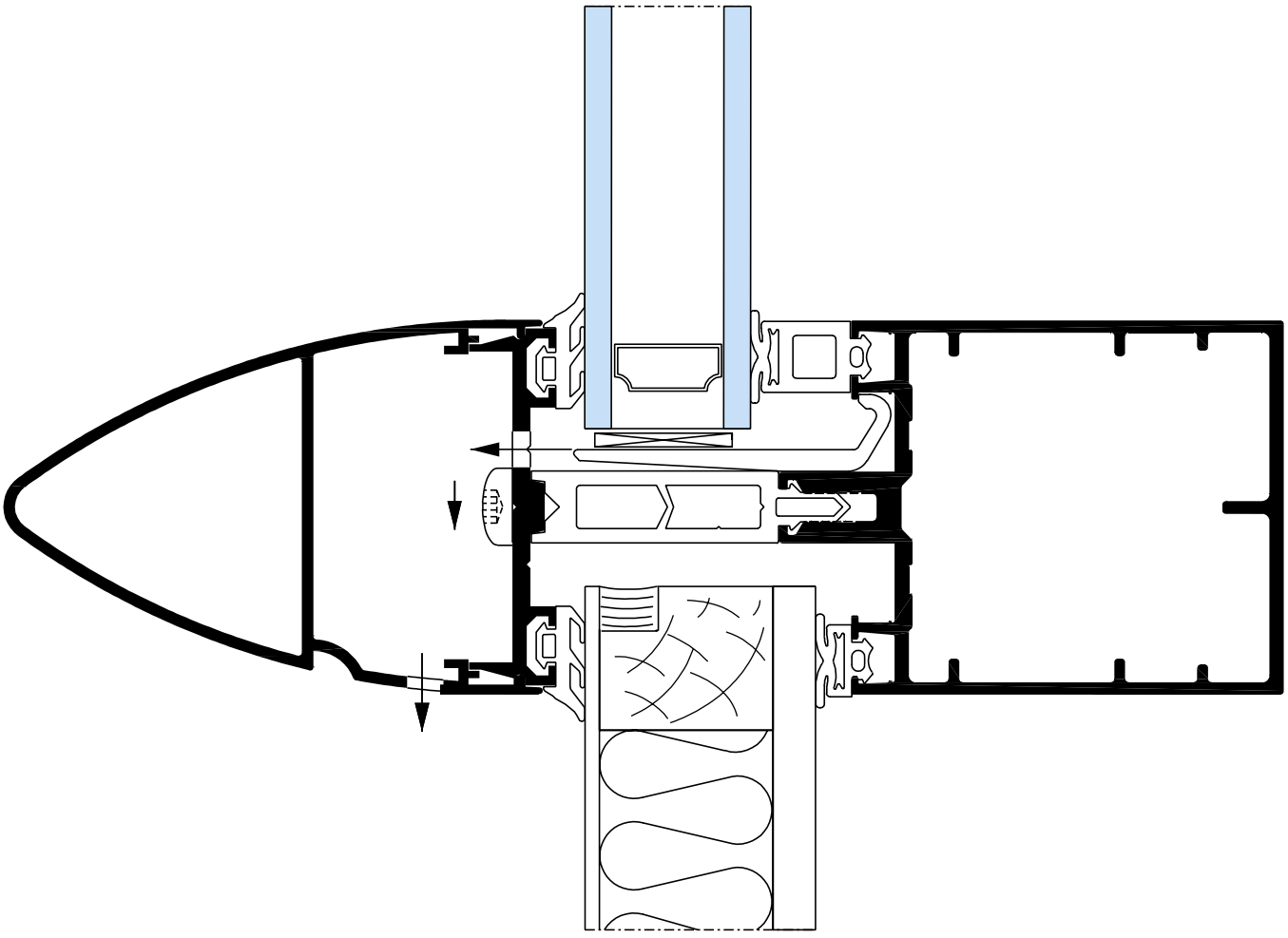
Waterproofed infills between the external element and wood.
NB the waterproofing product must be black, UV-insensitive, and resistant to driving rain.

Scale: 1/1

geffc065

Vertical cross section





Waterproofed infills between the external element and wood.
NB the waterproofing product must be black, UV-insensitive, and resistant to driving rain.

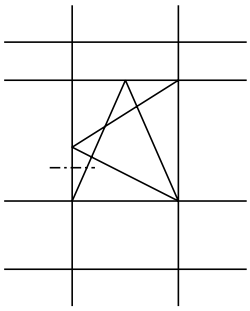
geffc066

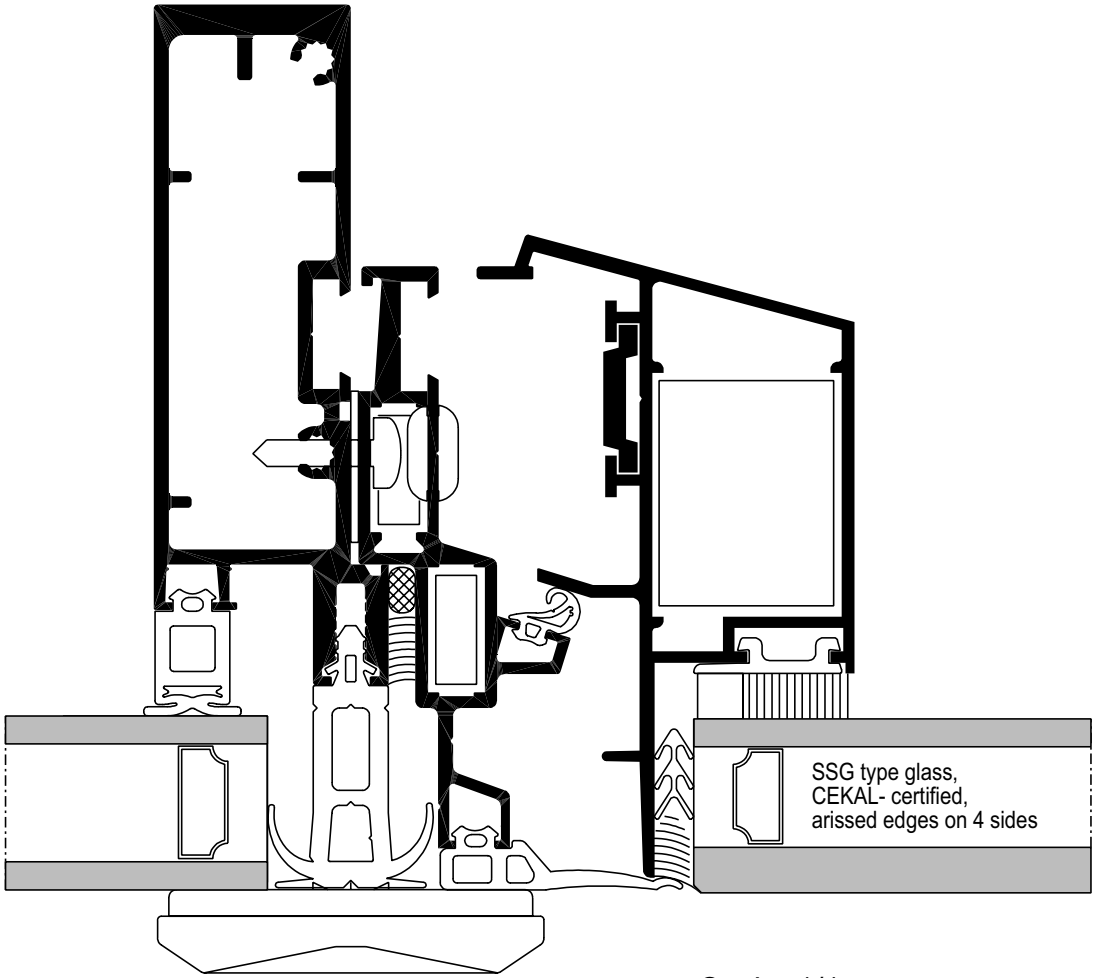
TECHNAL®

Node points (full-scale)

Horizontal line effect tilt-and-turn, inward-opening, bottom-hung

■ Horizontal cross section

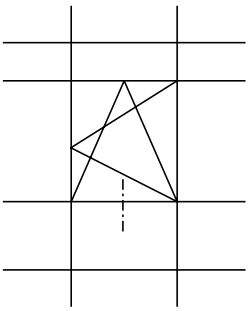


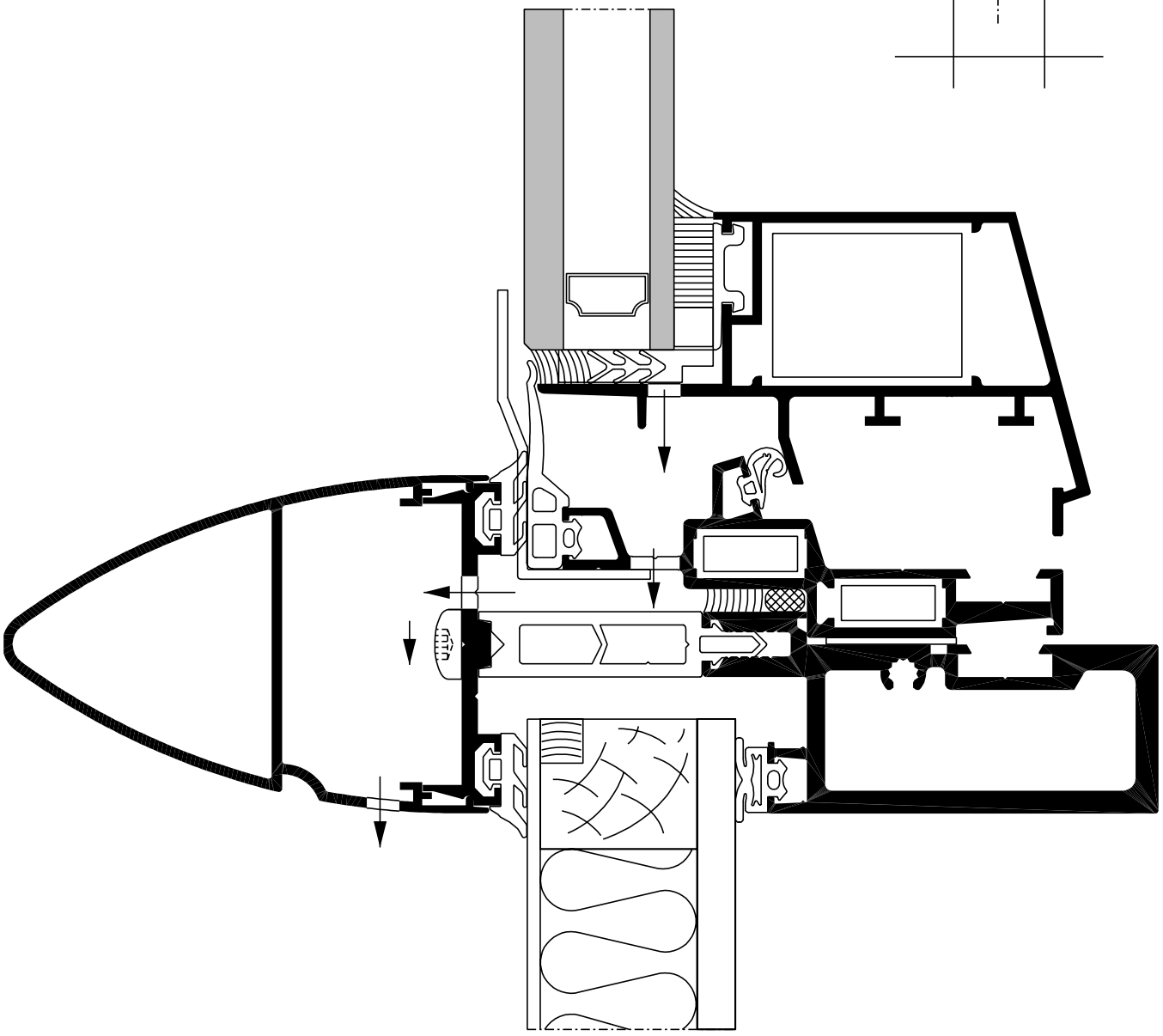


Scale: 1/1

geffc073

Vertical cross section





Waterproofed infills between the external element and wood.
NB the waterproofing product must be black, UV-insensitive, and resistant to driving rain.

Scale: 1/1

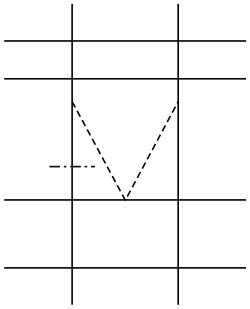
geffc074b

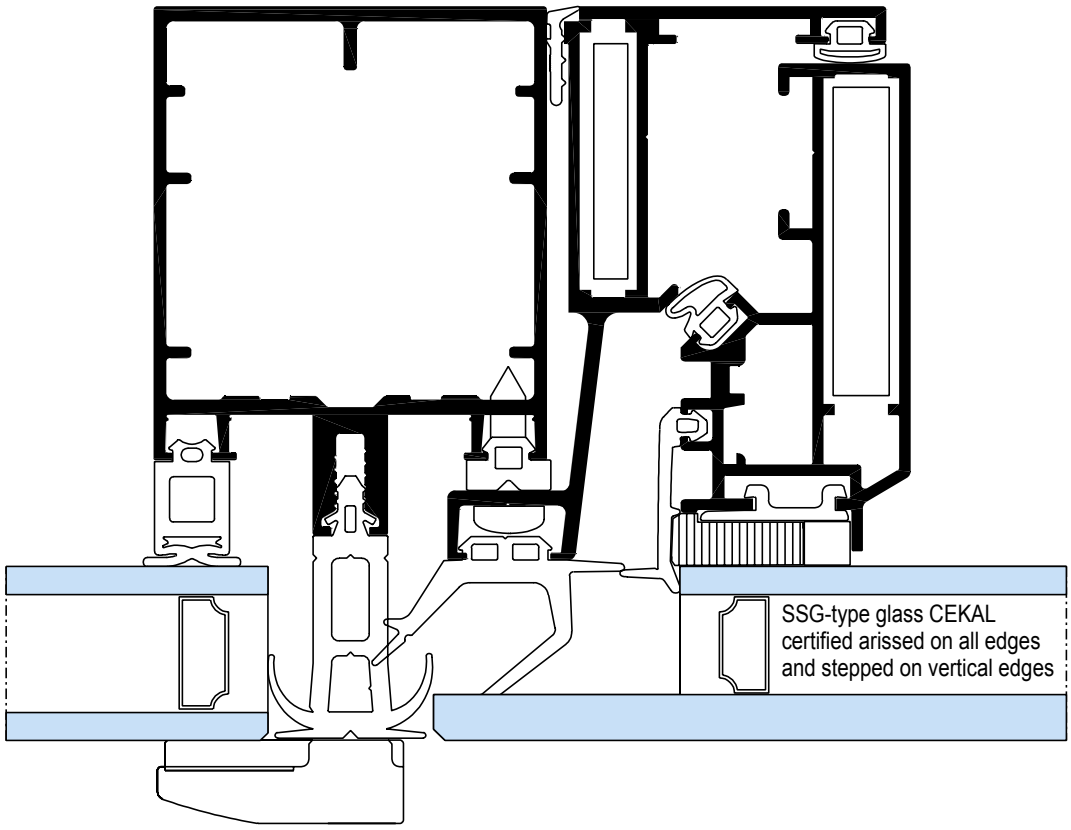
TECHNAL®

Node points (full-scale)

Horizontal line effect top-hung

■ Horizontal cross section

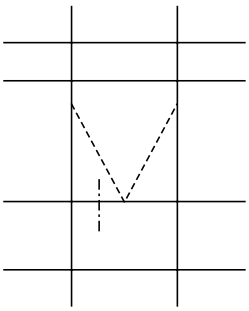


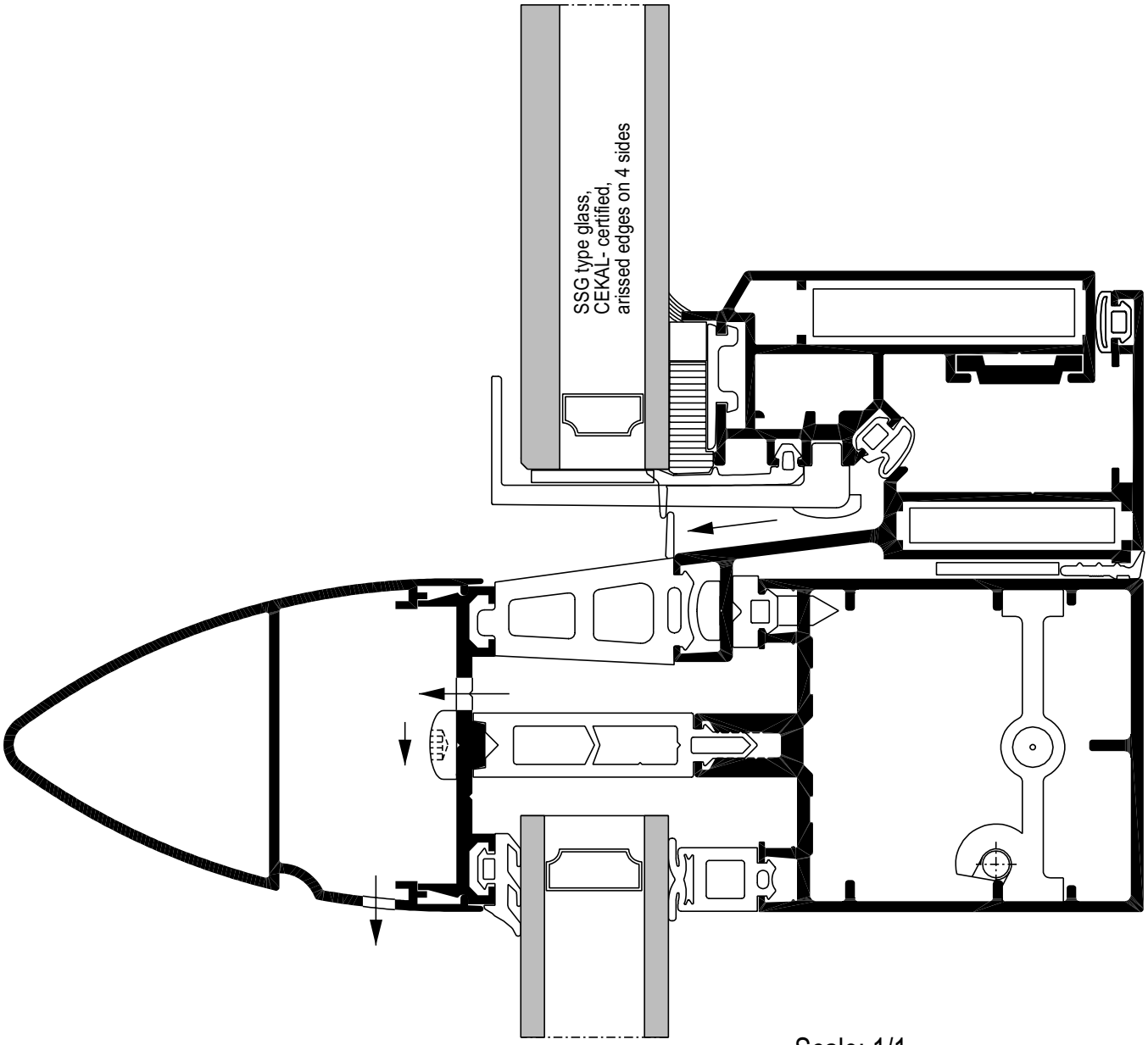


scale: 1/1

geffc077

Vertical cross section





Scale: 1/1

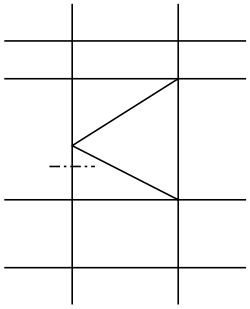
geffc078

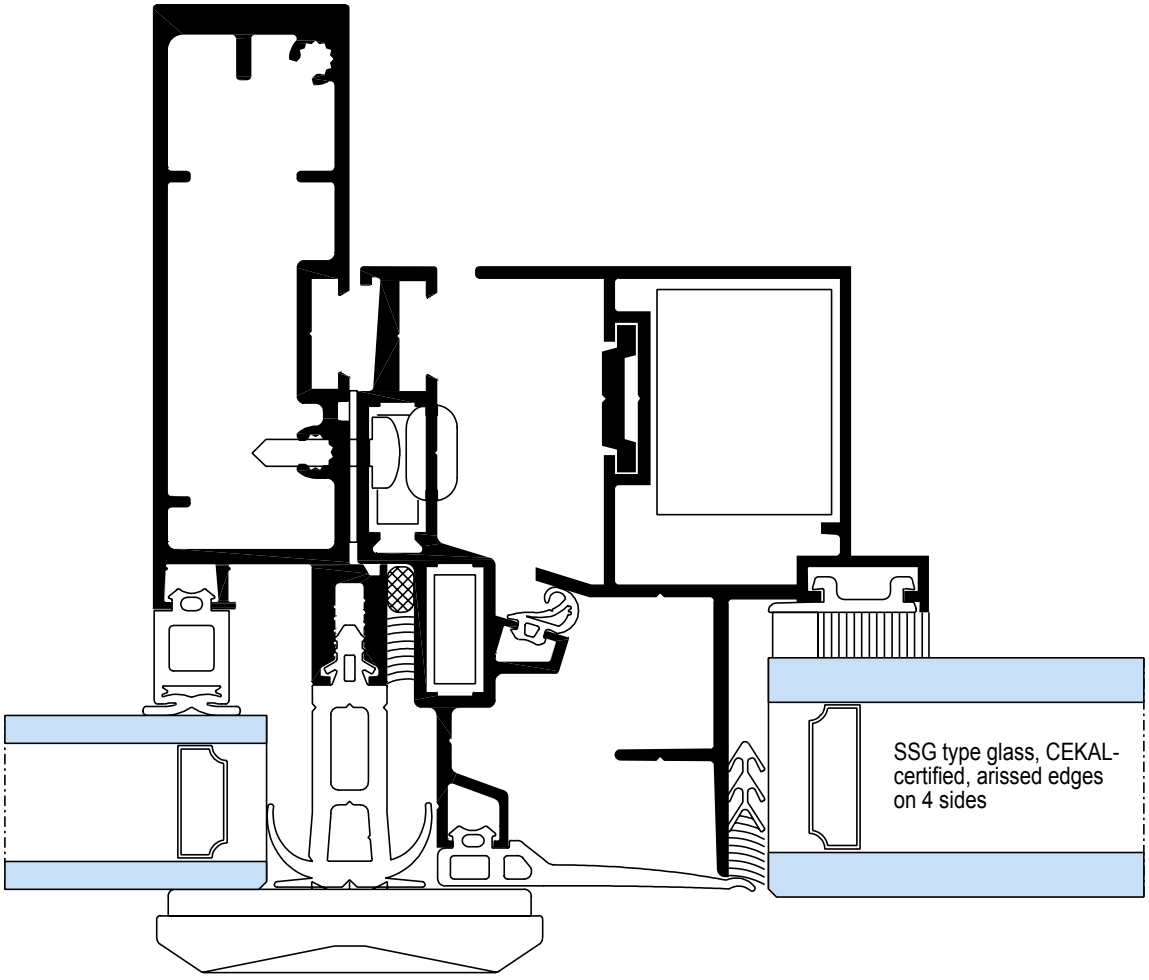
TECHNAL®

Node points (full-scale)

Horizontal line effect fire access

■ Horizontal cross section

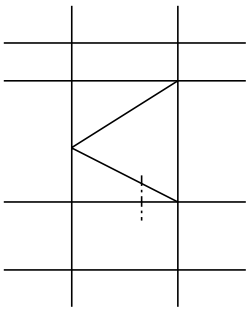


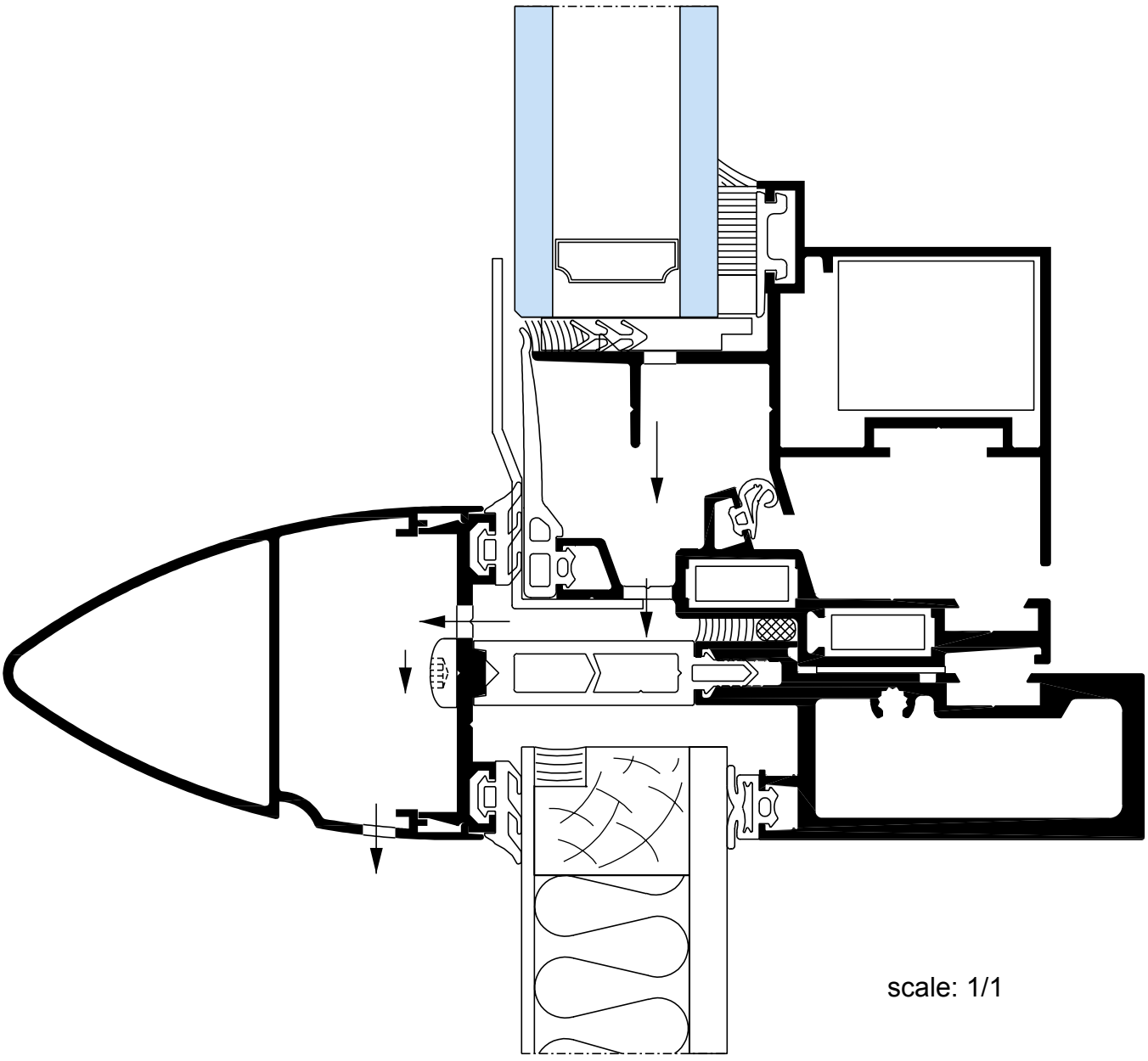


scale: 1/1

geffc081

Vertical cross section





scale: 1/1

Waterproofed infills between the external element and wood.
NB the waterproofing product must be black, UV-insensitive, and resistant to driving rain.

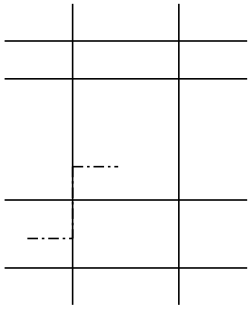
geffc082

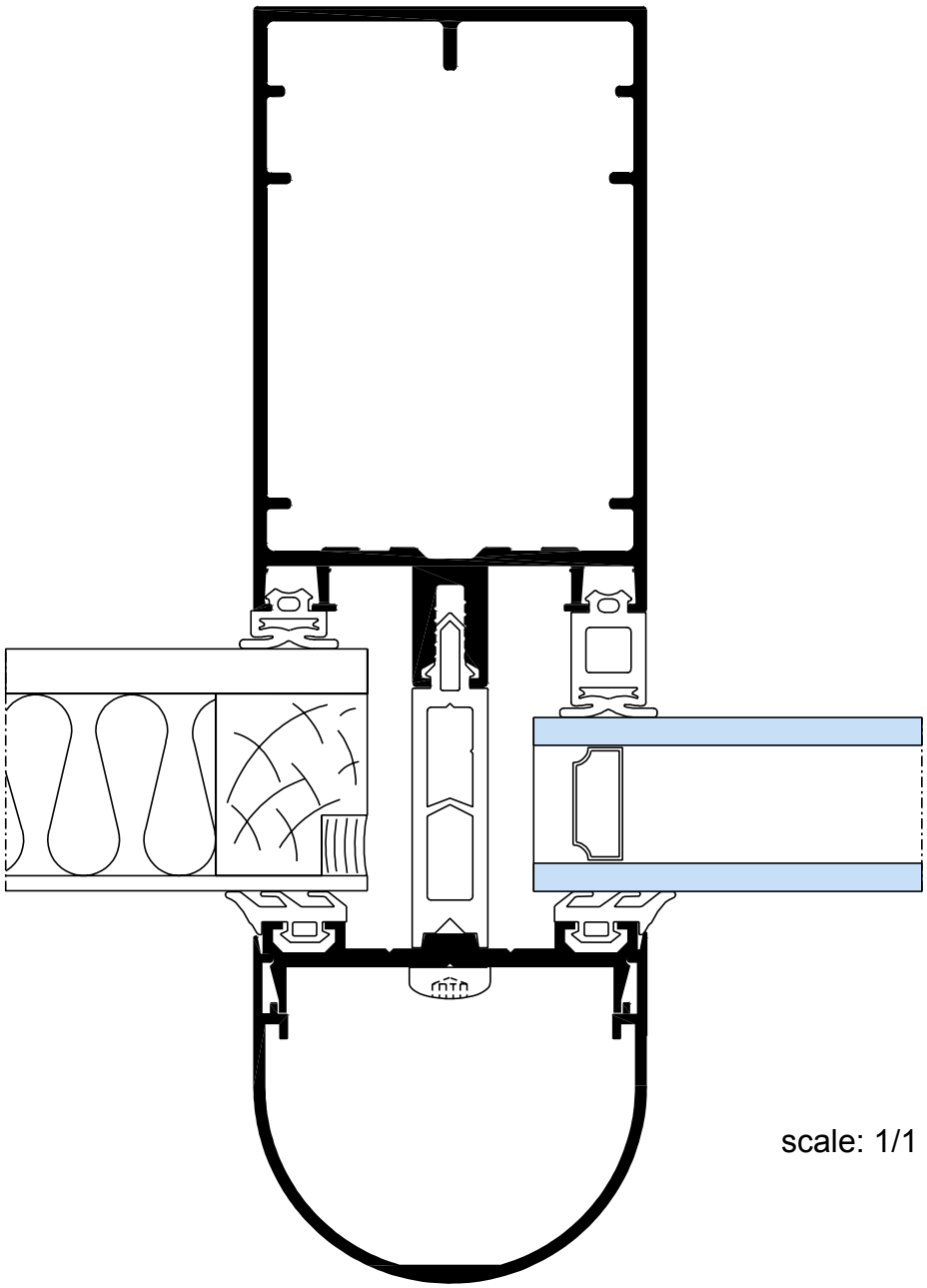
TECHNAL®

Node points (full-scale)

Vertical line effect fixed frame

■ Horizontal cross section



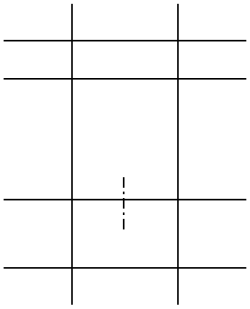


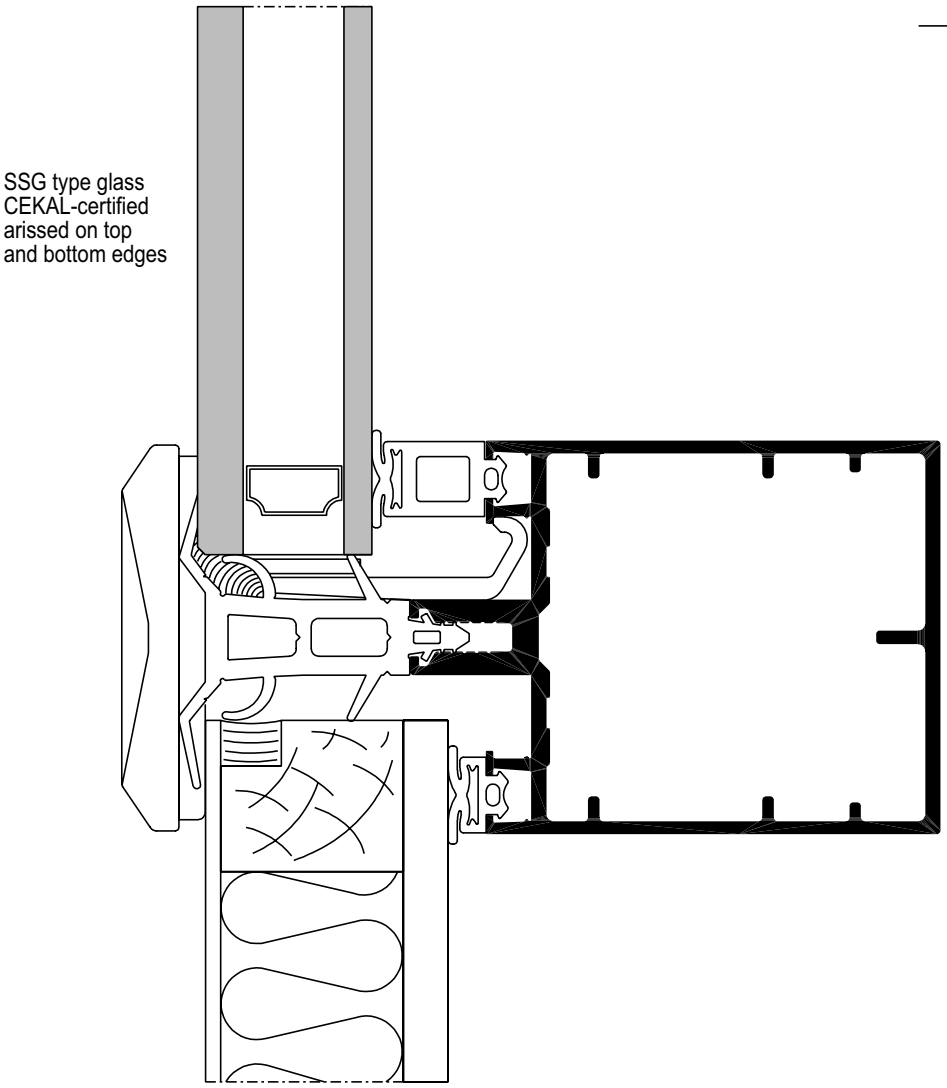
scale: 1/1

Waterproofed infills between the external element and wood.
NB the waterproofing product must be black, UV-insensitive, and resistant to driving rain.

geffc085

Vertical cross section





Waterproofed infills between the external element and wood.
NB the waterproofing product must be black, UV-insensitive, and resistant to driving rain.

Scale: 1/1

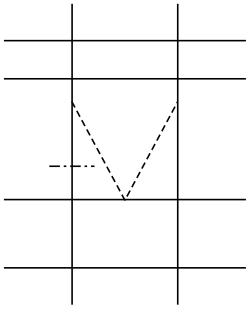
geffc086

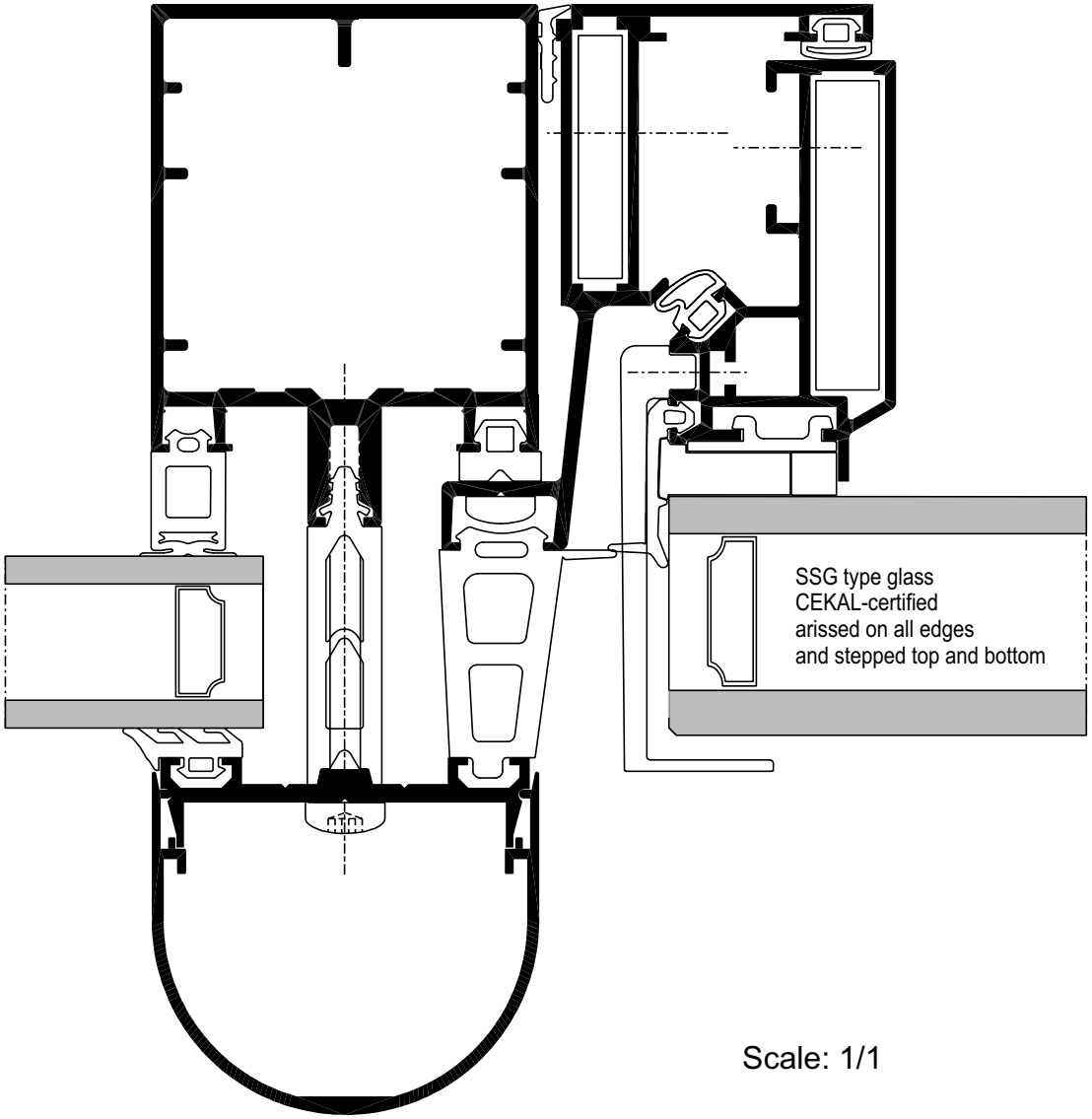
TECHNAL®

Node points (full-scale)

Vertical line effect top-hung

■ Horizontal cross section

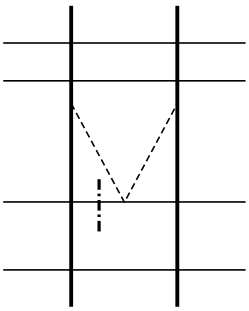


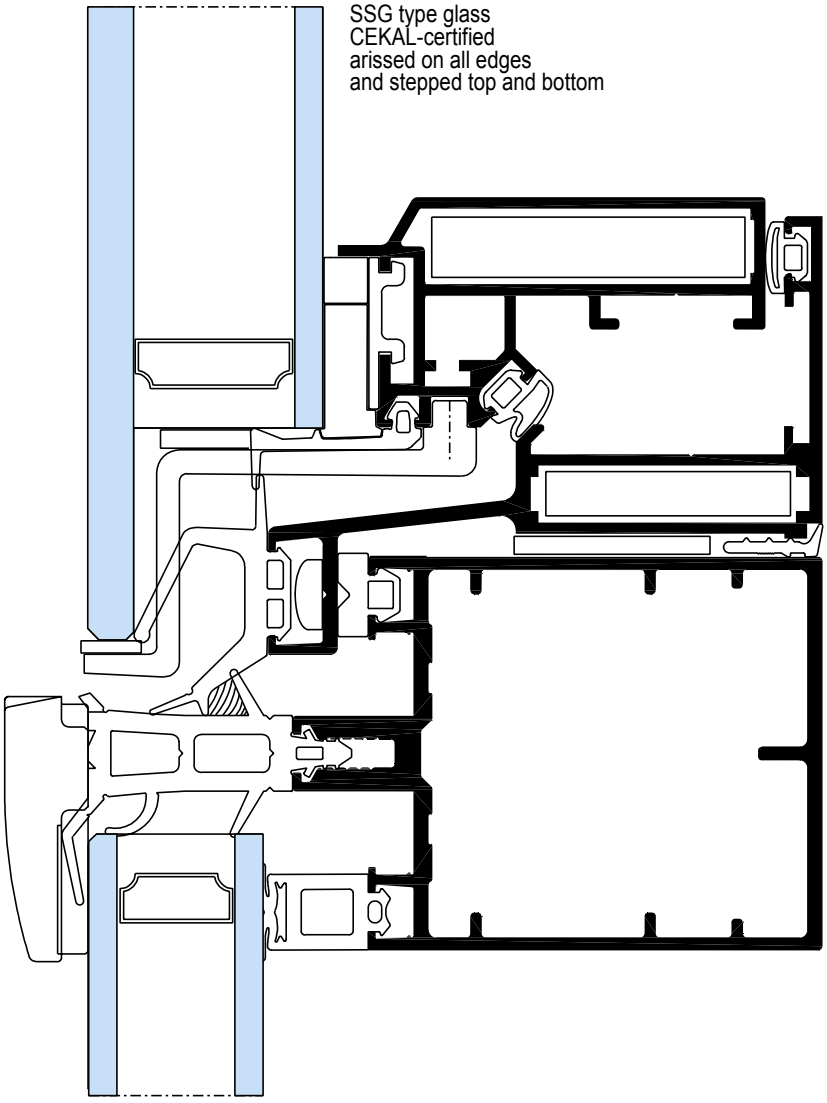


Scale: 1/1

geffc089

Vertical cross section





scale: 1/1

geffc090

Note - Note - Note - Note - Note - Note - Note - Note - Note - Note - Note - Note - Note - Note - Note -

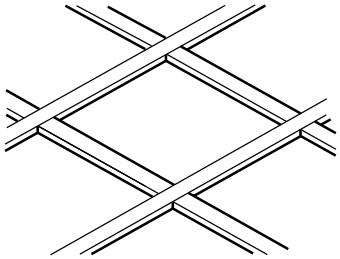
Géode

MX

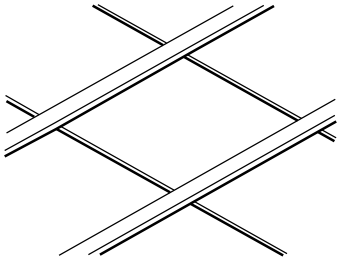
Rooflight

Product concept

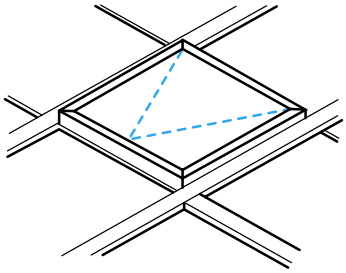
Grid effect



Vertical line effect



Rooflight



STRUCTURE

Grid

- 52mm module mullion-transom grid, assembled square cut with drainage continuity ensured.
- Profiles should be dimensioned according to applicable calculation formulae.

Infills

- 8-32mm infills are maintained vertically by a pressure plate and horizontally by glass roof capping pressure blocks (usage charts).
- "4-edged" or "2-edged" calculated glass according to DTU standard.

Weatherproofing

- Collection and drainage of any water ingress is via profile rebates.
- Internal weatherproofing is by EPDM gasket. Externally, a butyl strip on mullions and transoms is used, or a foam seal + silicone weatherproofing on transoms for vertical line effect finishes.

EFFECTS

Grid effect

- Vertical and horizontal caps secured on pressure plates.
- Minimum slope: 45° with cap clipped to pressure plate, 30° with glass roof capping pressure plate.

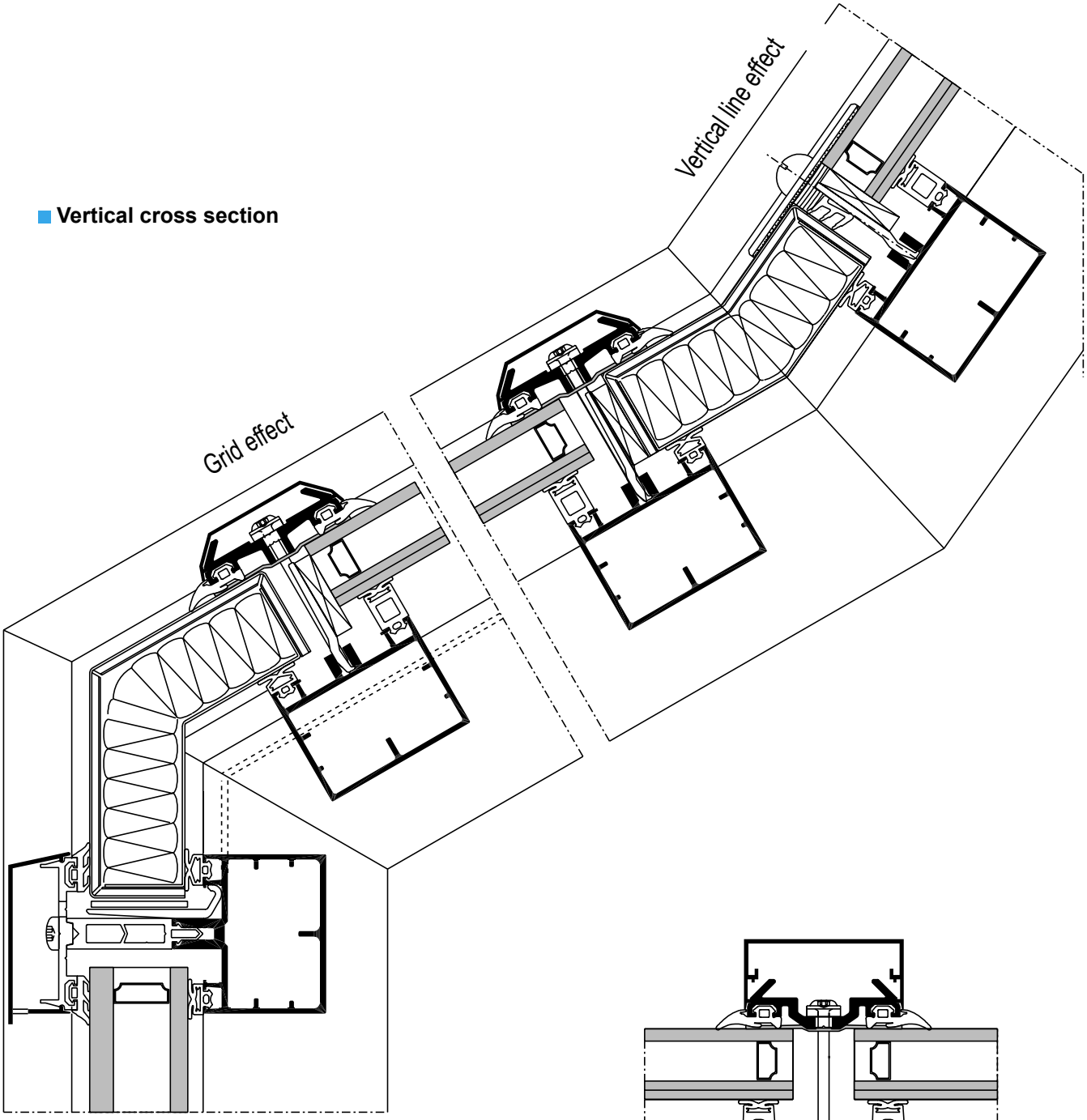
Vertical line effect

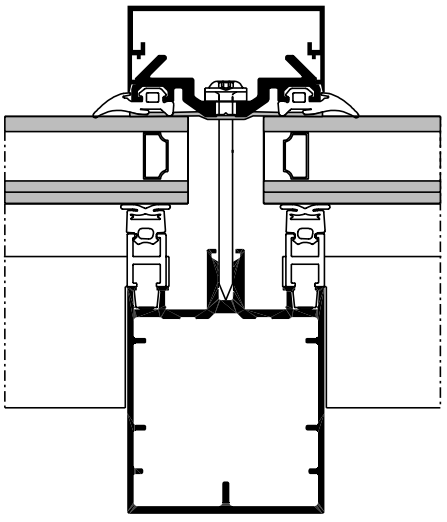
- No horizontal pressure plates or caps.
- SSG type CEKAL certified glass with arissed edges. 2-edged calculations according to DTU 39.
- Horizontally, a pressure block in the centre of the free edge holds infills for maximum deflection requirements exceeding 2mm.
- Minimum slope:
  - 10° for single glazing and 15° for insulating glazing unless otherwise specified.

Roof opening frames

- Roof vents may be integrated: 6-30mm glazing.
- 60° opening, electrically controlled.

Vertical cross section





Horizontal cross section

gevfc070

TECHNAL®

Performance

Thermal performance

Solar factor and thermal transmission U-values

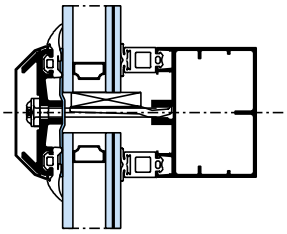
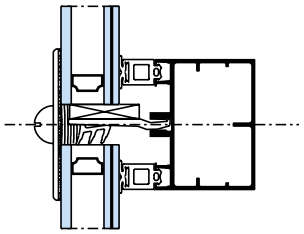
Géode façade with pressure plate : skylight

Grid and vertical line effects: FM155 + FM032 + FM048 cap + FM167 transoms + FM063 cap + HM508 vent

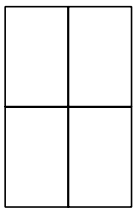
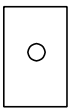
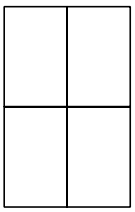
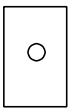
S_g glazing solar factor (including any solar protection)	**S_W** Solar factors - **winter**		
	Fixed light	Vent	
	S_W factor for all finishing Bare external fitting	Inclusive value α according to joinery finishing	
		0.4 blue, yellow, orange, pale red	1.0 black, dark brown, dark blue
0.1	0.10	0.10	0.13
0.2	0.19	0.18	0.21
0.3	0.28	0.26	0.29
0.4	0.38	0.34	0.37
0.5	0.47	0.41	0.44
0.6	0.56	0.49	0.52
0.7	0.65	0.57	0.60
0.8	0.75	0.65	0.68

S_g glazing solar factor (including any solar protection)	**S_W** Solar factors - **summer**		
	Fixed light	Vent	
	S_W factor for all finishing Bare external fitting	Inclusive value α according to joinry finishing	
		0.4 blue, yellow, orange, pale red	1.0 black, dark brown, dark blue
0.1	0.10	0.11	0.16
0.2	0.20	0.19	0.24
0.3	0.29	0.27	0.32
0.4	0.38	0.35	0.40
0.5	0.47	0.43	0.47
0.6	0.57	0.51	0.55
0.7	0.66	0.58	0.63
0.8	0.75	0.66	0.71

gevfc019

GEODE **Rooflight** with pressure plate	Transom (1/3 scale)	glazing with aluminium spacer
		

U_{cw} coefficient for bare wall (W/m².K)
NB maximum Ucw value is not specified for skylights in RT2000.

Variants	**Grid effect** W = 1.35 m x H = 1.50 m		**Vertical line effect** W = 1.35 m x H = 1.50 m	
U-value of glass unit centre pane (W/m².K)	Fixed frames 	Vent only 	Fixed frames 	Vent only 
1.1 *	1.6	2.6	See note on Argon	
1.2	1.6	2.7		
1.3	1.7	2.8	1,7	2.9
1.4	1.8	2.8	1.8	2.9
1.5	1.9	2.9	1.9	3.0
1.6	2.0	3.0	2.0	3.1
1.7	2.1	3.1	2.1	3.1
1.8	2.2	3.1	2.2	3.2
1.9	2.2	3.2	2.2	3.3
2.0	2.3	3.3	2.3	3.3
2.1	2.4	3.3	2.4	3.4
2.2	2.5	3.4	2.5	3.5
2.3	2.5	3.5	2.5	3.5
2.4	2.7	3.5	2.7	3.6
2.5	2.8	3.6	2.8	3.7
2.6	2.9	3.7	2.9	3.8
2.7	2.9	3.8	2.9	3.8
2.8	3.0	3.8	3.0	3.9
2.9	3.1	3.9	3.1	4.0

*not validated by CSTB: reading obtained solely with 2 low-emissivity layers

NB the silicone bonding of vertical line effect glazing does not allow Argon infills

TECHNAL®

Usage charts

Use of skylight charts

1. Mullion selection

- Determine the surface load Q.
- Select the mullion according to load.

2. Transom selection

- Determine the load q.
- Check the maximum permissible dimension according to load.

3. Check maximum load for CM025 Glass supports

- Establish the load Pc on transom.
- Check maximum load for skylight angle.

gevfc001

1. Calculation of surface load Q

formula:

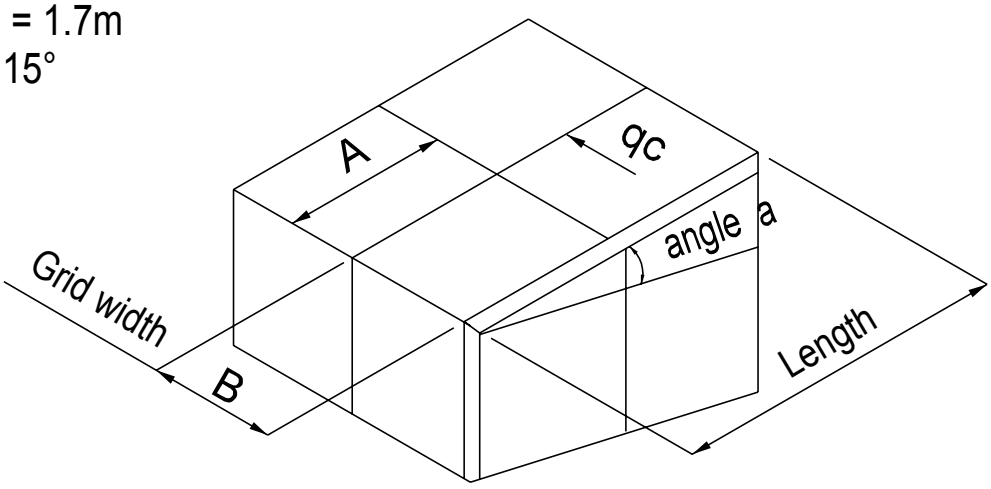
$$Q = \frac{Qv \sin a + Qn \cos a + Qr \cos a + qc \cos a}{B}$$

where:

Qv = wind surface load	⇨	Kg / m²
Qn = snow surface load	⇨	Kg / m²
Qr = infill surface load	⇨	Kg / m²
qc = inclusive value 15	⇨	Kg / ml
B = grid width (w)	⇨	meter
a = roof incline from horizontal	⇨	decimal degrees
A = transom length	⇨	meter
L = total length of load-bearing mullion	⇨	meter

Qv and Qn values are to be determined according to the Snow and Wind criteria (NV65 December 1999):
region, Ks site coefficient, large surface reduction coefficient, building height qH/q10,
masking effect, local external and internal activity coefficients Ce and Ci.

Example for skylight L 4.5 x l 1.7
Region 3 Qv = 75 – zone 3 Qn = 55
10/15/6 glazing gives Qr = 40 kg/m²
Mullion without reinforcement = 15
Grid width = 1.7m
Angle a = 15°



Select mullion to be used according to:
1. Grid width
2. Grid length
3. Q-value found.

formula:

$$Q = \frac{75 \sin 15 + 55 \cos 15 + 40 \cos 15 + 15 \cos 15}{1.7}$$

Q = 119.7 kg

Mullions available: FM159 reinforced
FM 160

gevfc069

TECHNAL®

Usage charts

Surface load for FM155

Chart for load Q-values from Q=30-Q=100 (kg/m²)
for FM155 profiles; deflection limit f/l = 1/300

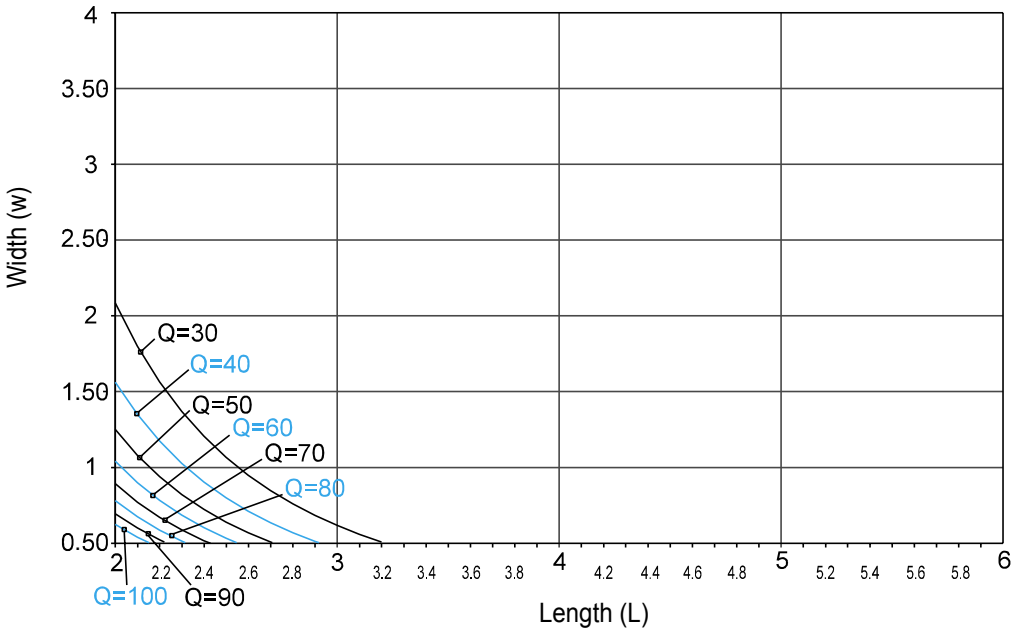
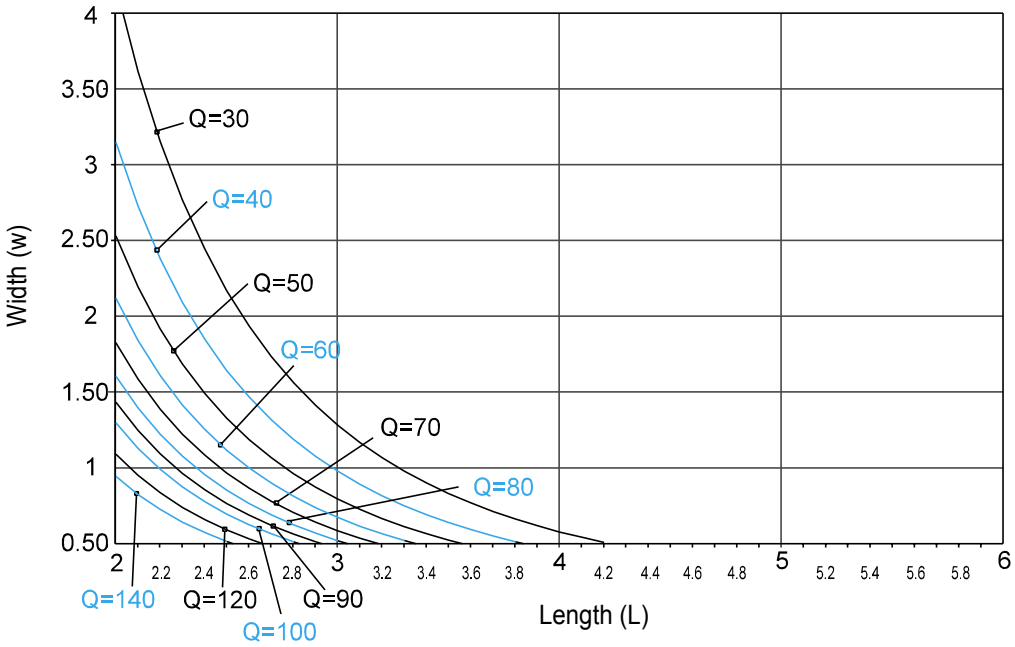


Chart for load Q-values from Q=30-Q=100 (kg/m²)
for FM155 profiles with reinforcements; deflection limit f/l = 1/300
40x40x4 reinforcement



gevfc002

Usage charts

Surface load for FM156

Chart for load Q-values from Q=30-Q=140 (kg/m²)
for FM156 profiles; deflection limit f/l = 1/300

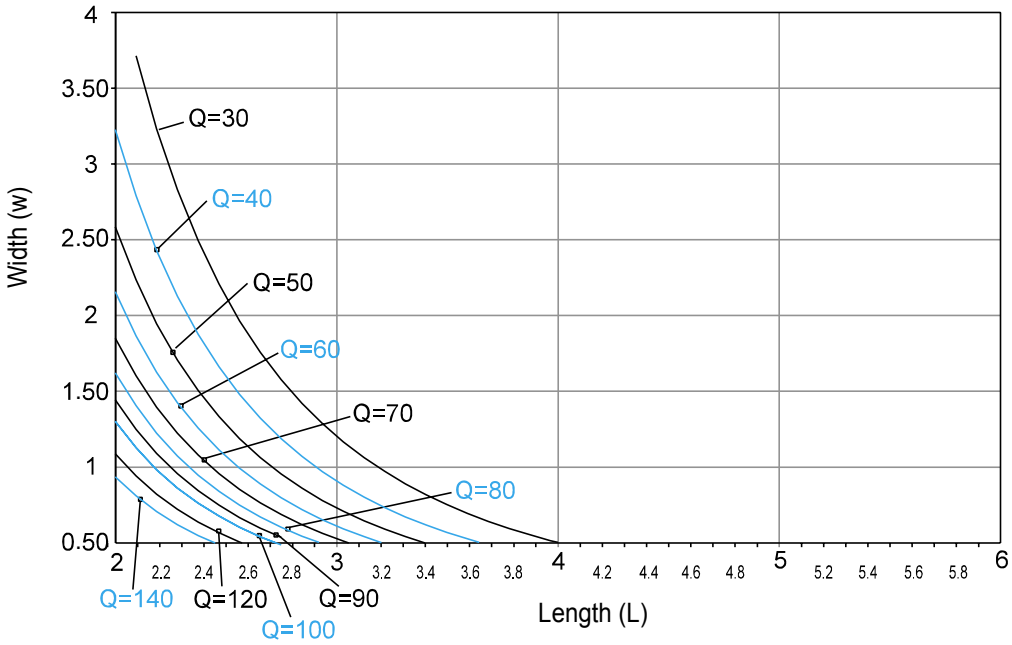
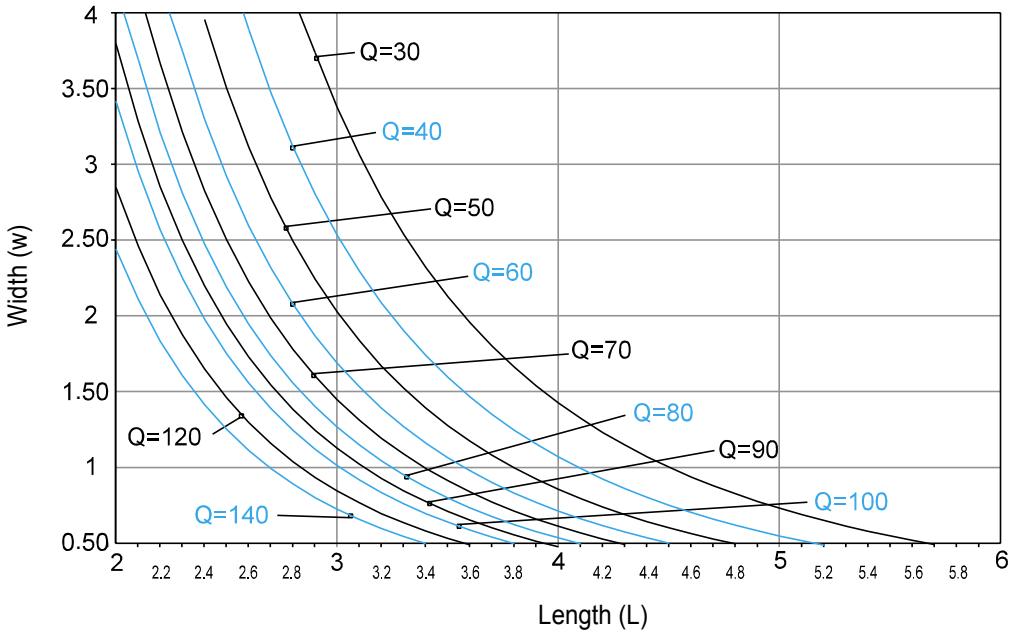


Chart for load Q-values from Q=30-Q=140 (kg/m²)
for FM156 profiles with reinforcements; deflection limit f/l = 1/300
60x40x4 reinforcement



gevfc003

TECHNAL®

Usage charts

Surface load for FM253

Chart for load Q-values from Q=30-Q=140 (kg/m²)
for FM253 profiles; deflection limit f/l = 1/300

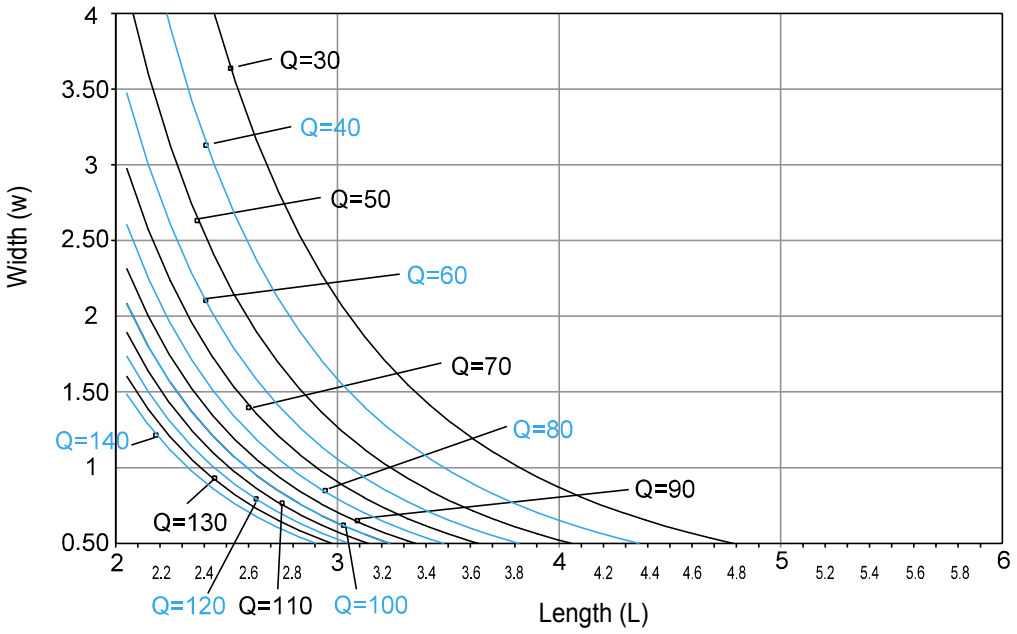
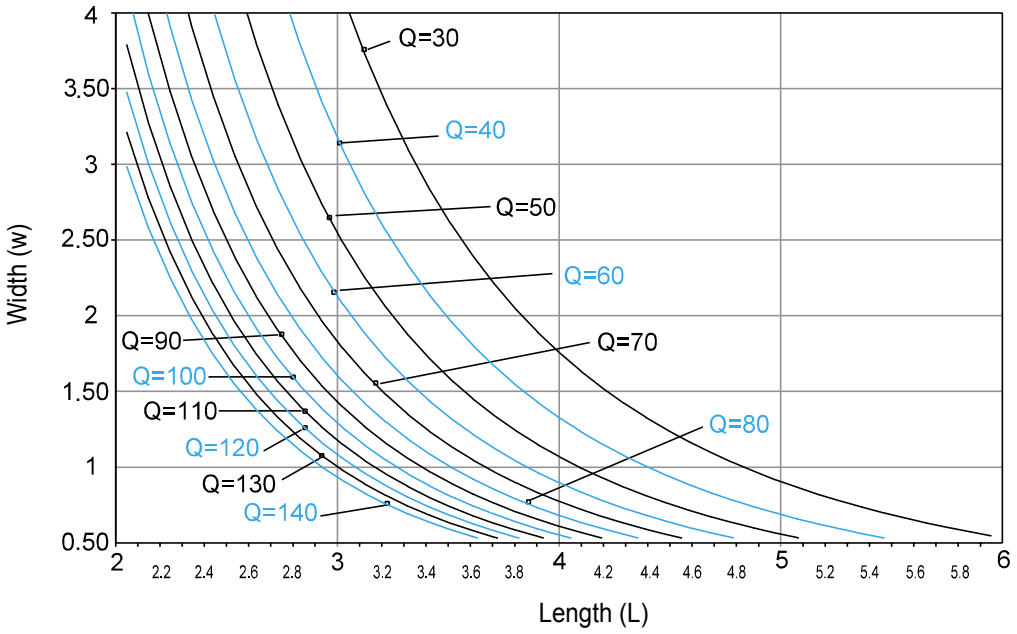


Chart for load Q-values from Q=30-Q=140 (kg/m²)
for FM253 profiles with reinforcements; deflection limit f/l = 1/300
60x40x4 reinforcement



gevfc004

Usage charts

Surface load for FM169

Chart for load Q-values from Q=30-Q=140 (kg/m²)
for FM169 profiles; deflection limit f/l = 1/300

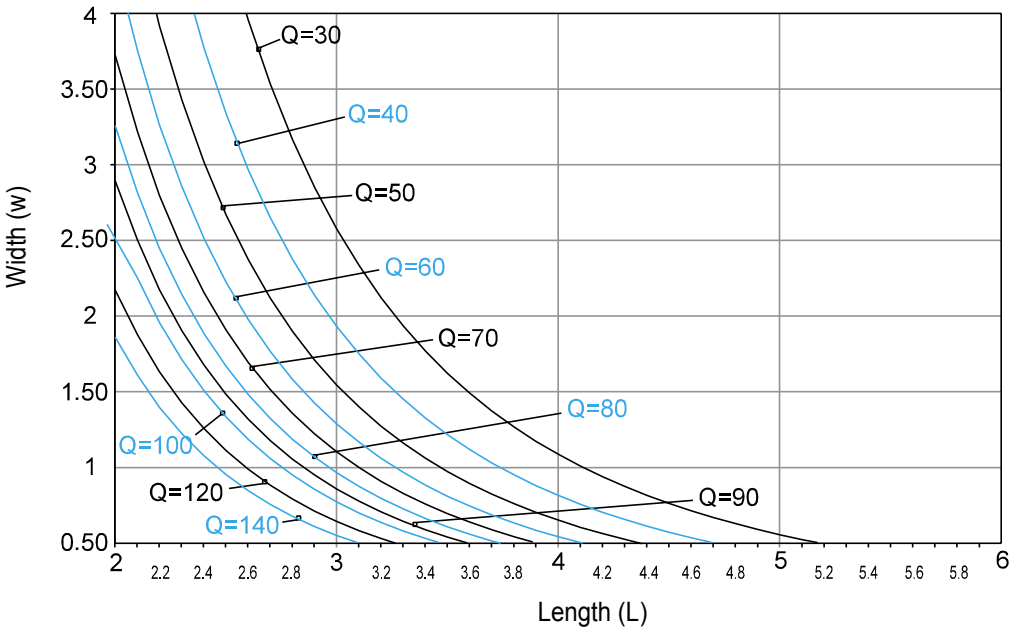
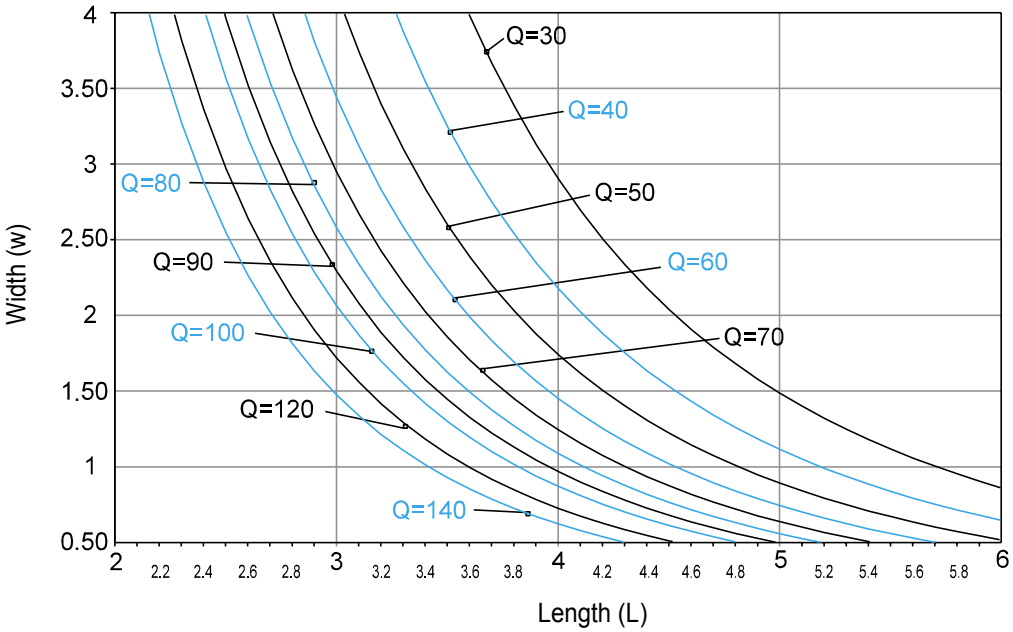


Chart for load Q-values from Q=30-Q=140 (kg/m²)
for FM169 profiles with reinforcements; deflection limit f/l = 1/300
80x40x4 reinforcement



gevfc005

Usage charts

Surface load for FM254

Chart for load Q-values from Q=30-Q=140 (kg/m²)
for FM254 profiles; deflection limit f/l = 1/300

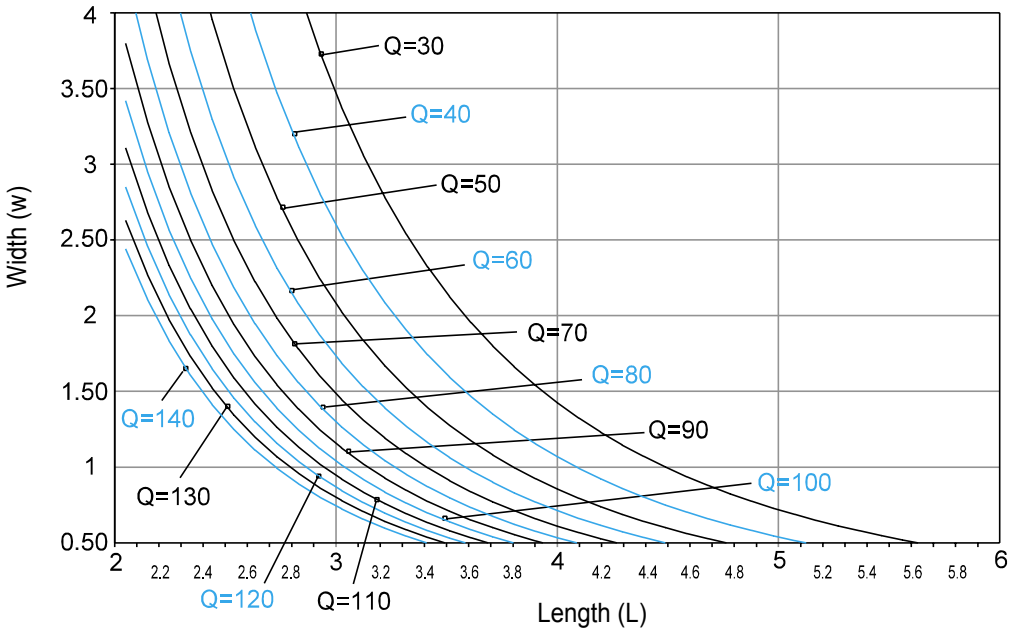
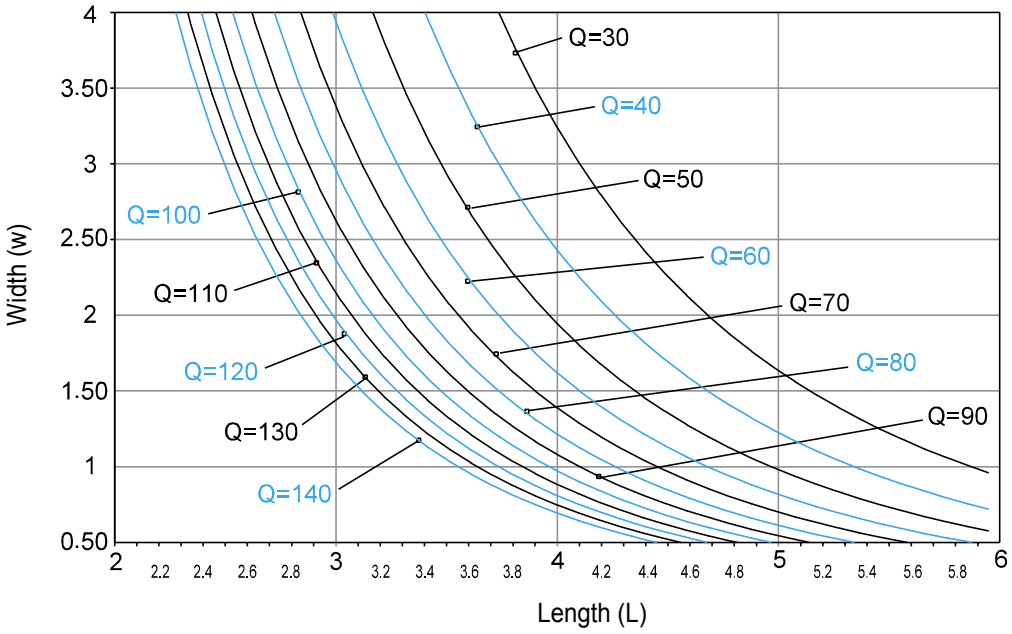


Chart for load Q-values from Q=30-Q=140 (kg/m²)
for FM254 profiles with reinforcements; deflection limit f/l = 1/300
80x40x4 reinforcement



gevfc006

Usage charts

Surface load for FM157

Chart for load Q-values from Q=30-Q=140 (kg/m²)
for FM157 profiles; deflection limit f/l = 1/300

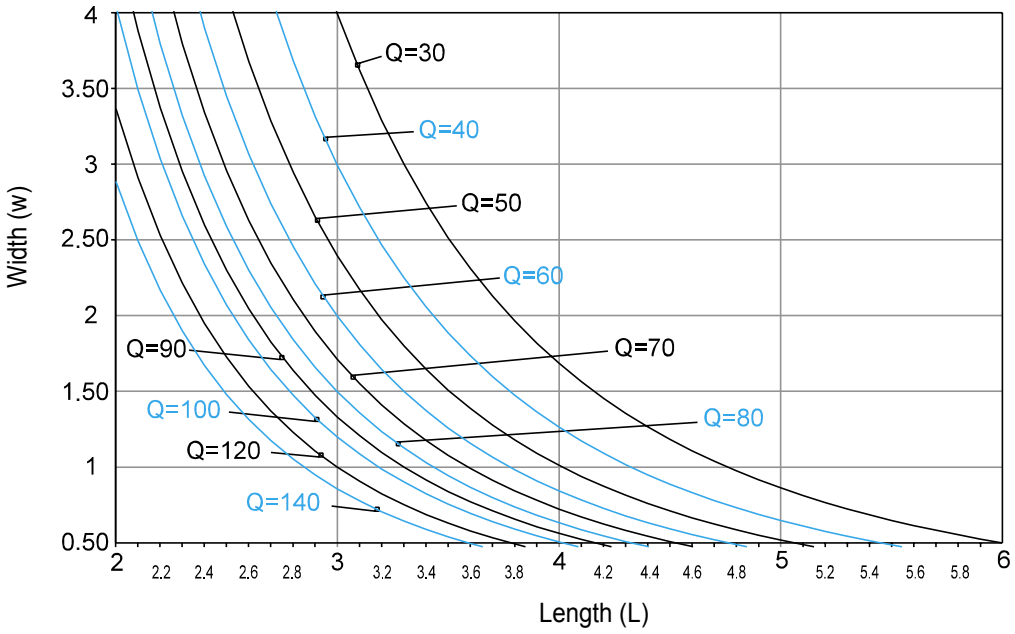
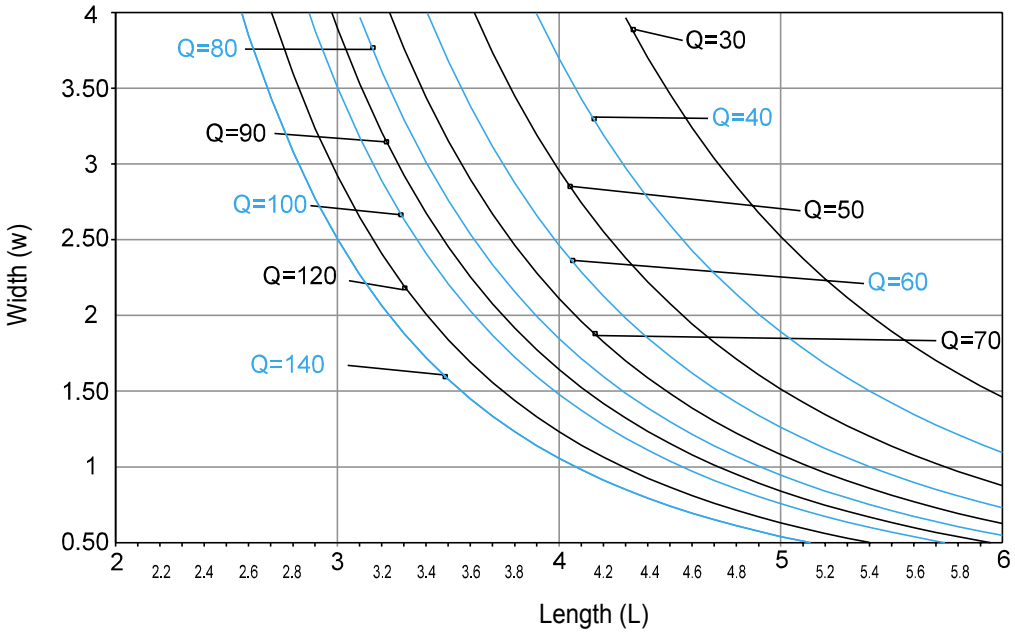


Chart for load Q-values from Q=30-Q=140 (kg/m²)
for FM157 profiles with reinforcements; deflection limit f/l = 1/300
100x40x4 reinforcement



gevfc007

TECHNAL®

Usage charts

Surface load for FM158

Chart for load Q-values from Q=30-Q=140 (kg/m²)
for FM158 profiles; deflection limit f/l = 1/300

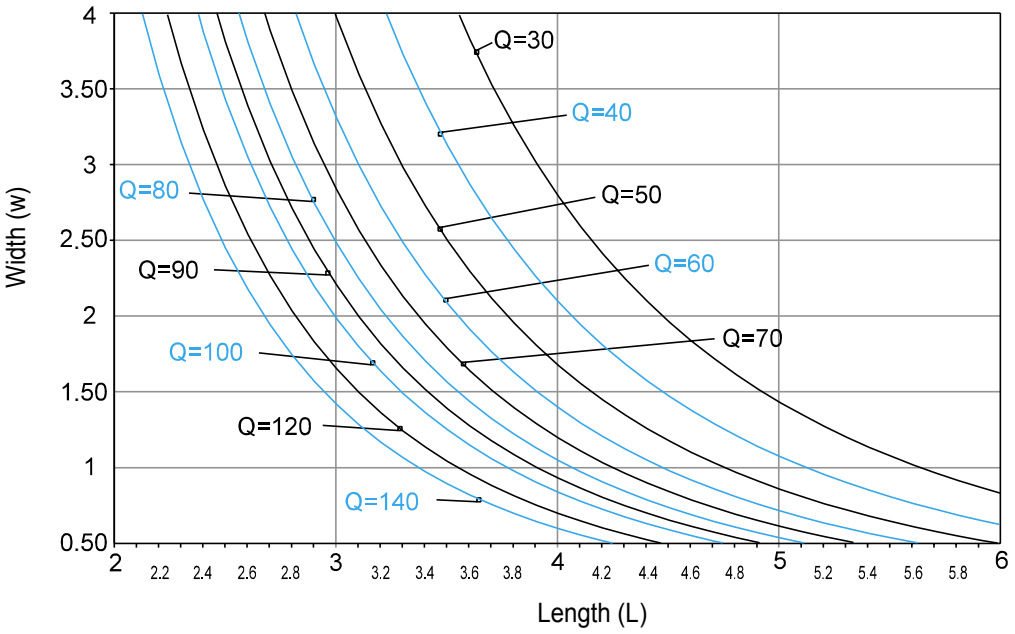
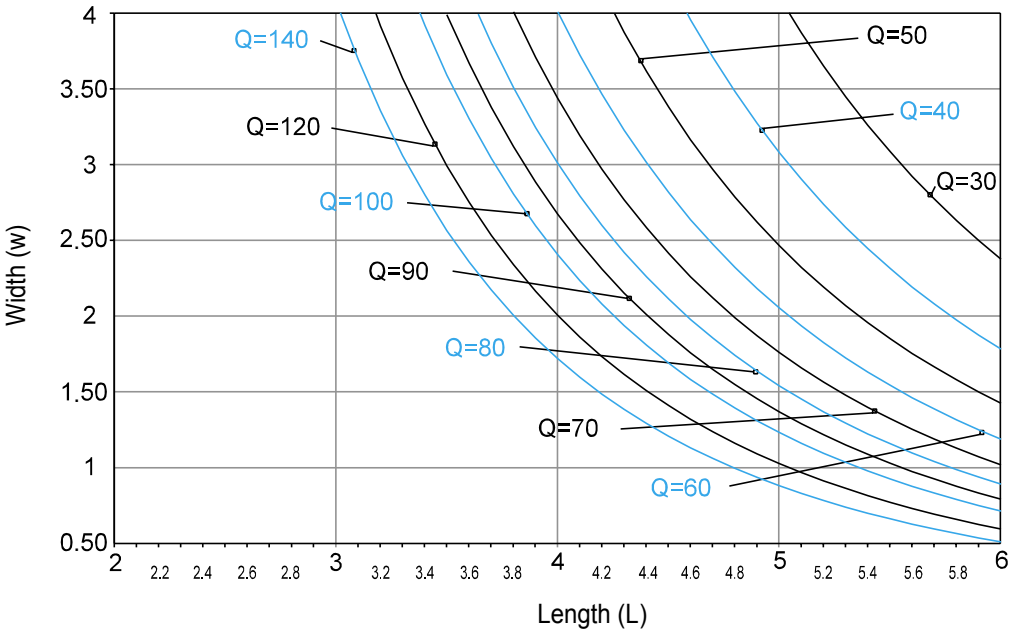


Chart for load Q-values from Q=30-Q=140 (kg/m²)
for FM158 profiles with reinforcements; deflection limit f/l = 1/300
120x40x4 reinforcement



gevfc008

Usage charts

Surface load for FM255

Chart for load Q-values from Q=30-Q=140 (kg/m²)
for FM255 profiles; deflection limit f/l = 1/300

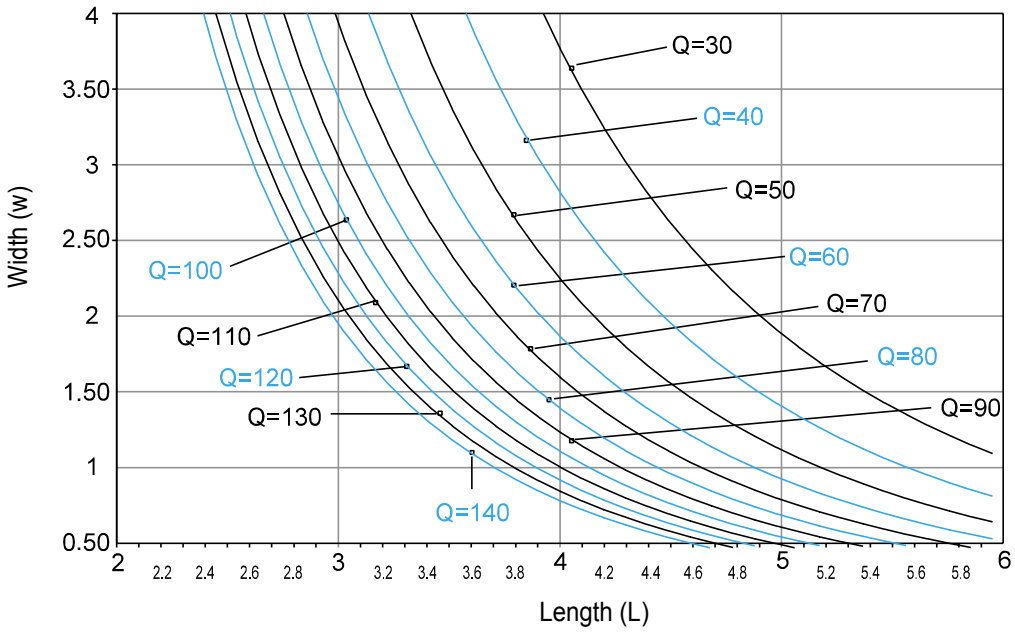
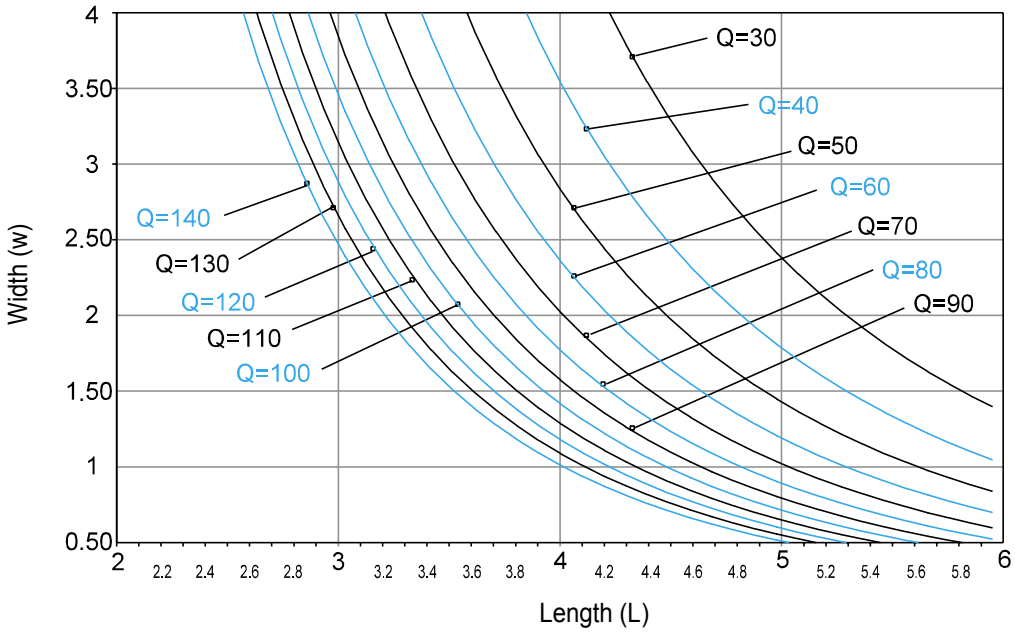


Chart for load Q-values from Q=30-Q=140 (kg/m²)
for FM255 profiles with reinforcements; deflection limit f/l = 1/300
120x40x4 reinforcement



gevfc009

Usage charts

Surface load for FM256

Chart for load Q-values from Q=30-Q=140 (kg/m²)
for FM256 profiles; deflection limit f/l = 1/300

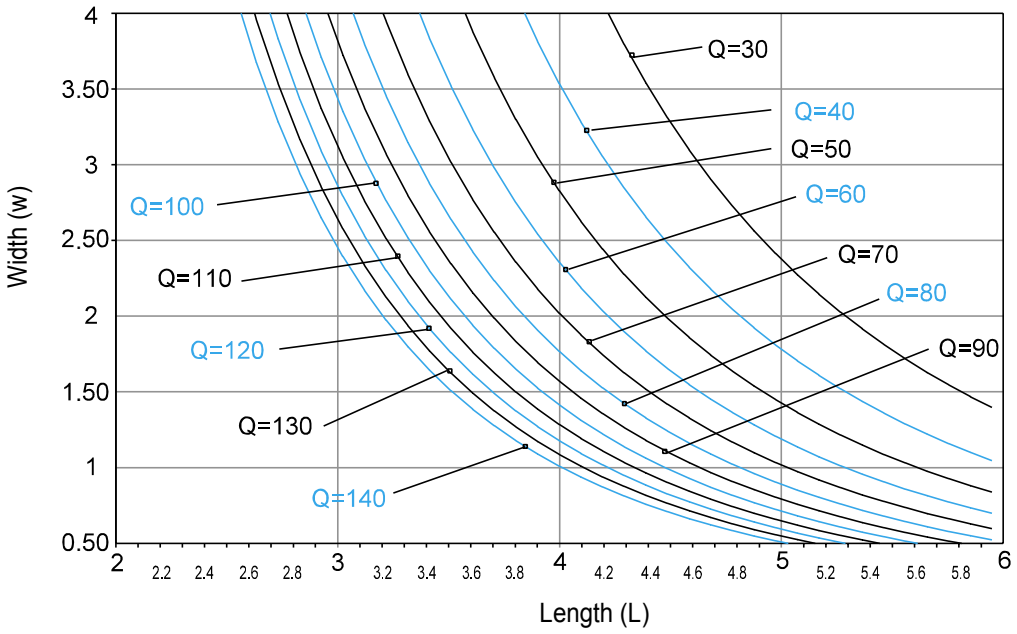
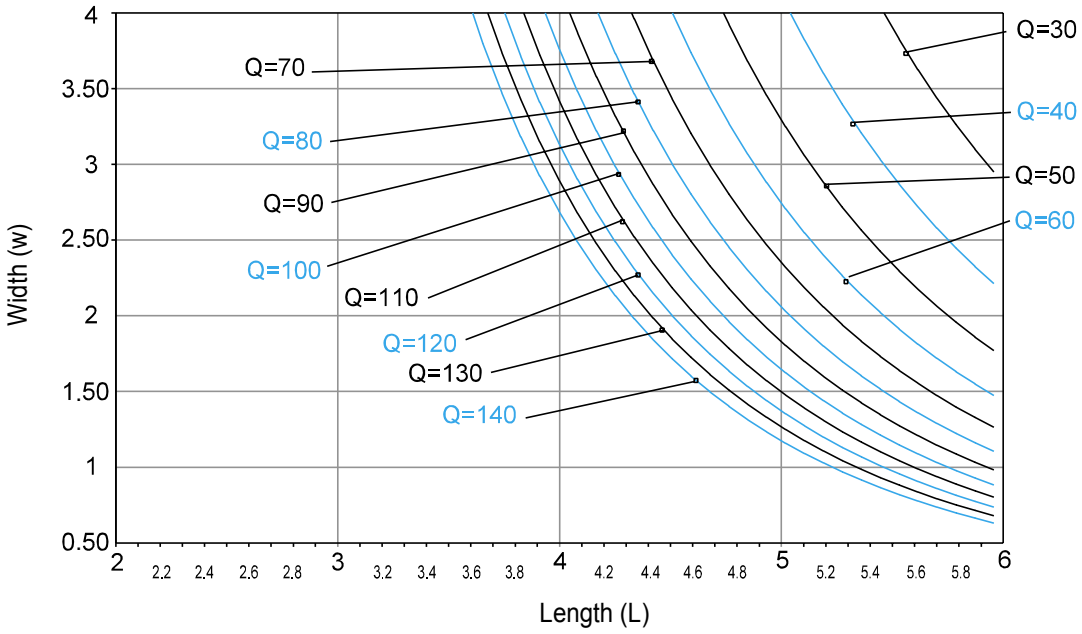


Chart for load Q-values from Q=30-Q=140 (kg/m²)
for FM256 profiles with reinforcements; deflection limit f/l = 1/300
60x40x4 reinforcement



gevfc010

Usage charts

Surface load for FM159

Chart for load Q-values from Q=30-Q=140 (kg/m²)
for FM159 profiles; deflection limit f/l = 1/300

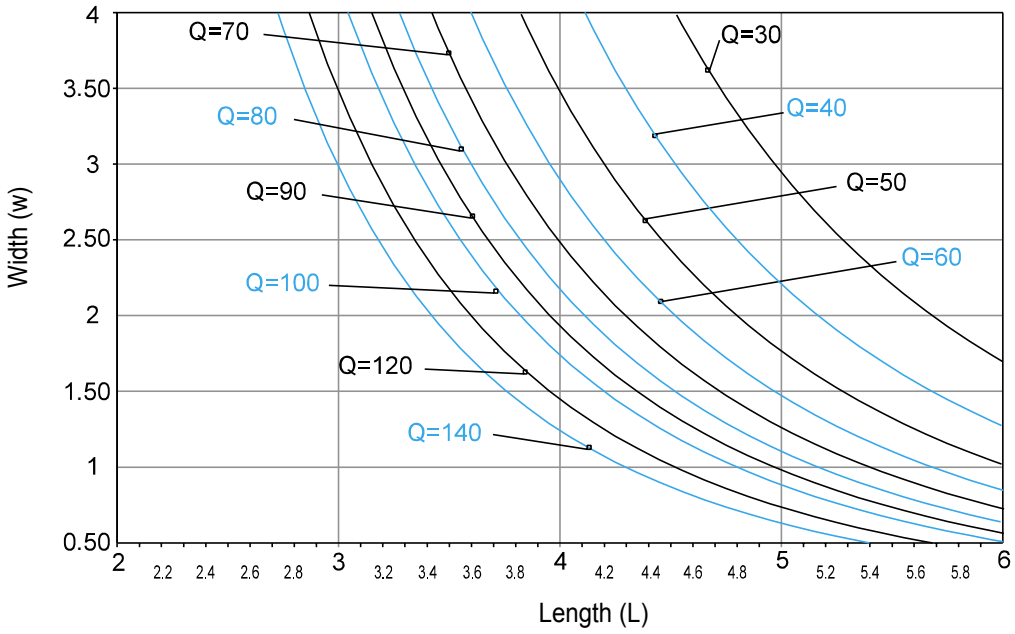
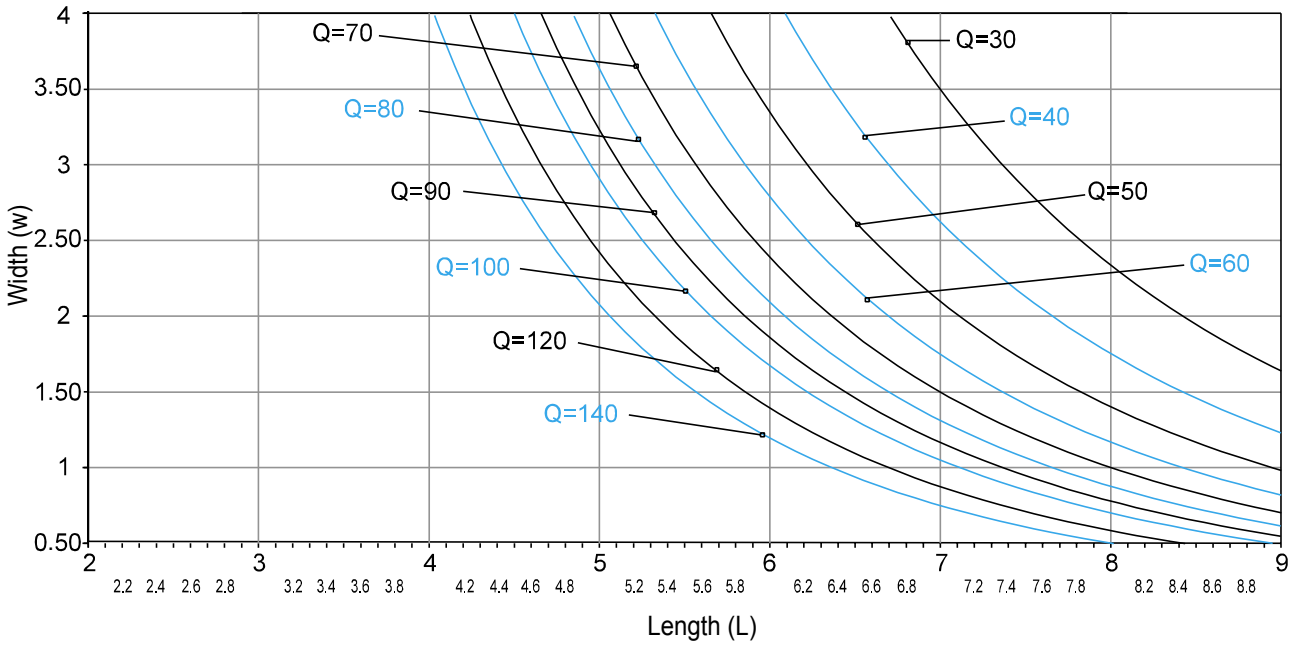


Chart for load Q-values from Q=30-Q=140 (kg/m²)
for FM159 profiles with reinforcements; deflection limit f/l = 1/300
120x40x4 and 40x40x4 reinforcements



gevfc011

TECHNAL®

Usage charts

Surface load for FM257

Chart for load Q-values from Q=30-Q=140 (kg/m²)
for FM257 profiles; deflection limit f/l = 1/300

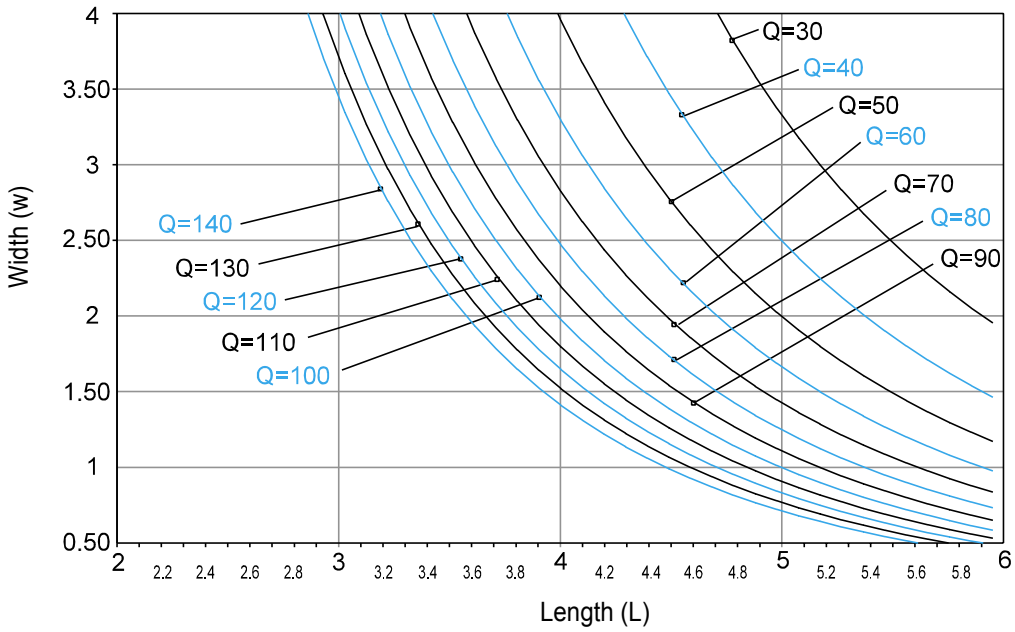
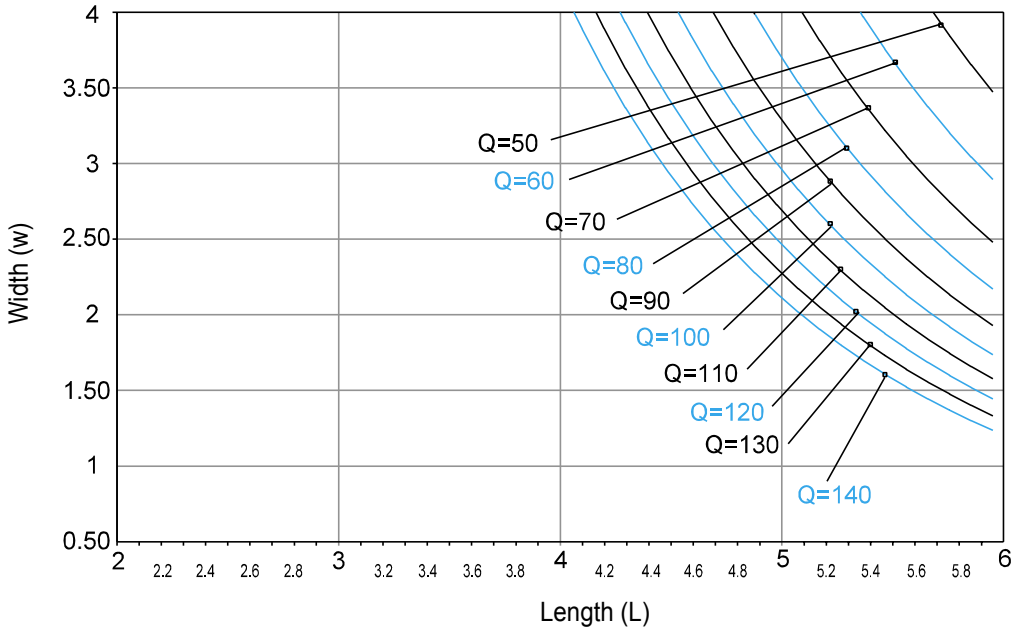


Chart for load Q-values from Q=30-Q=140 (kg/m²)
for FM257 profiles with reinforcements; deflection limit f/l = 1/300
60x40x4 reinforcement



gevfc012

Usage charts

Surface load for FM160

Chart for load Q-values from Q=40-Q=140 (kg/m²)
for FM160 profiles; deflection limit f/l = 1/300

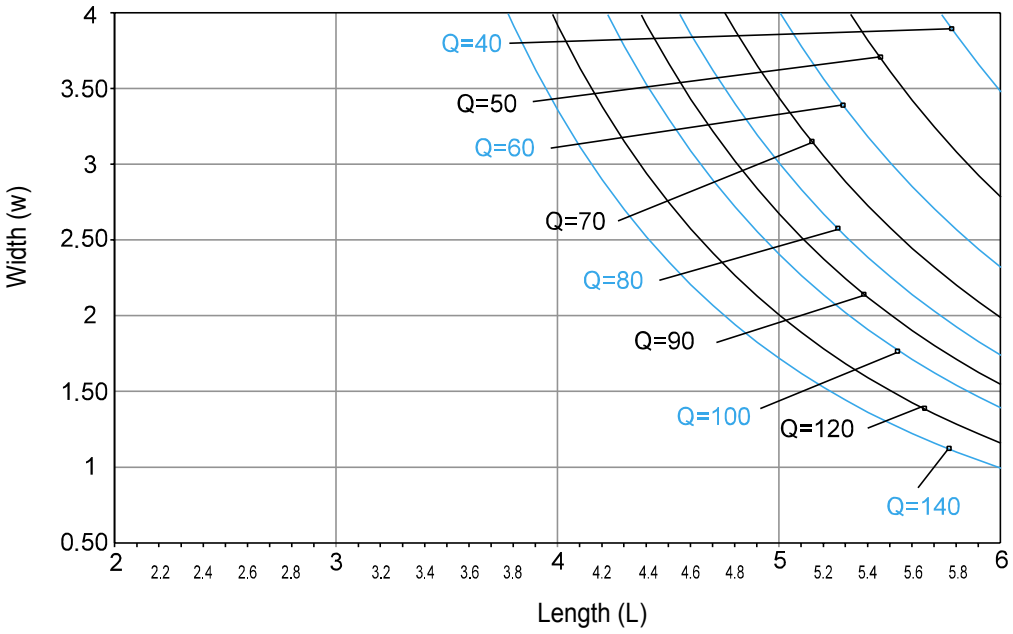
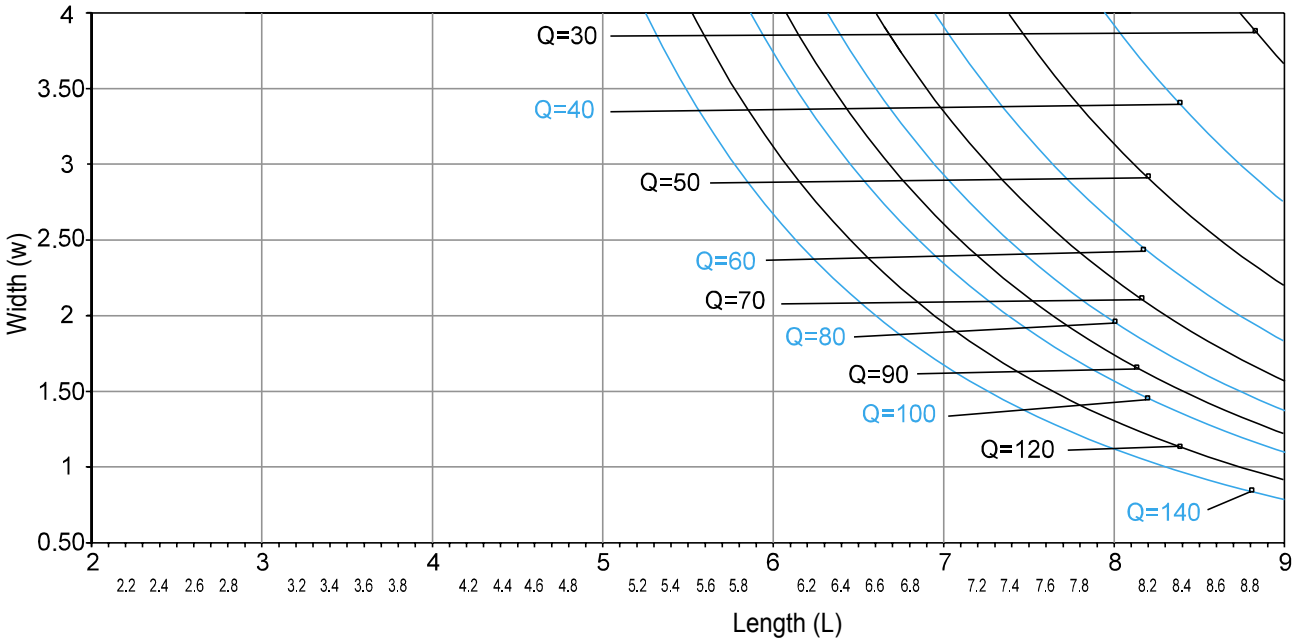


Chart for load Q-values from Q=30-Q=140 (kg/m²)
for FM160 profiles with reinforcements; deflection limit f/l = 1/300
140x40x4 reinforcement



gevfc066

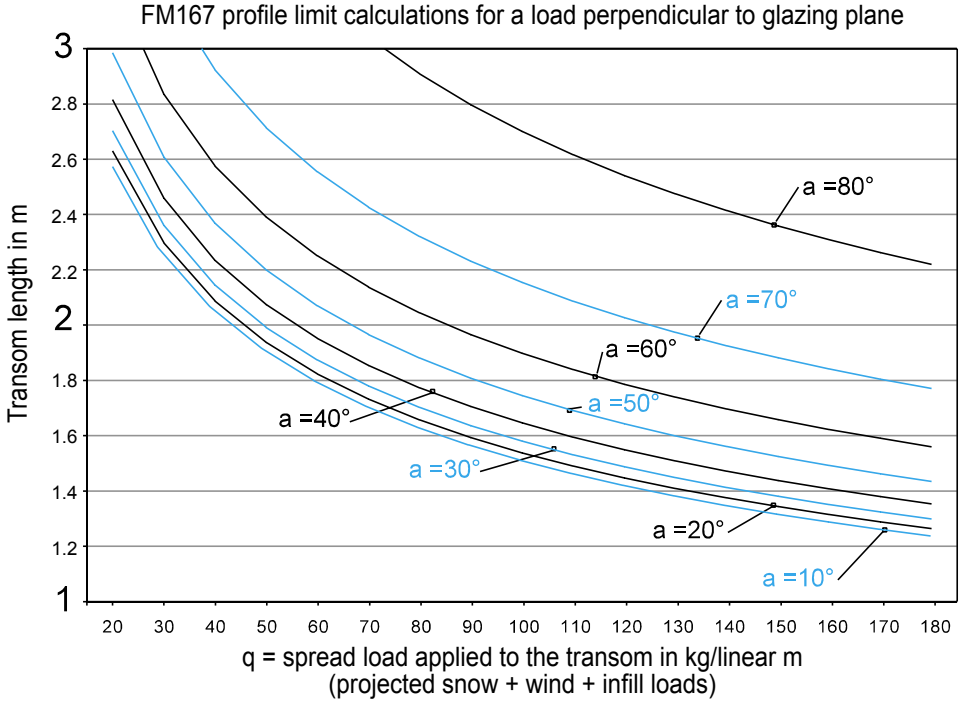
Usage charts

FM167 transoms

Chart 1 Transom choice

formula: $q = \frac{Q \times A \times B}{2 (A + B)}$

FM167 profile limit calculations for a load perpendicular to glazing plane

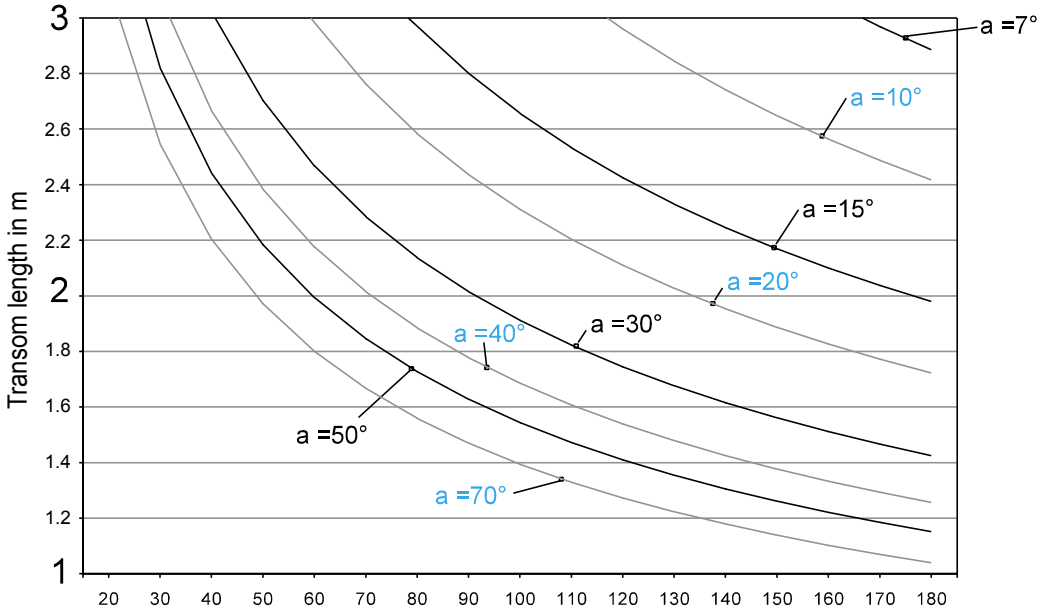


q = spread load applied to the transom in kg/linear m
(projected snow + wind + infill loads)

Chart 2 Maximum load calculation for CM025 Glass supports

formula: $Pc = (Qn + Qr) \times A \times B \times \sin a$

FM167 profile limit calculations for a load in glazing plane



Pc = transom stress load in Kg

gevfc013

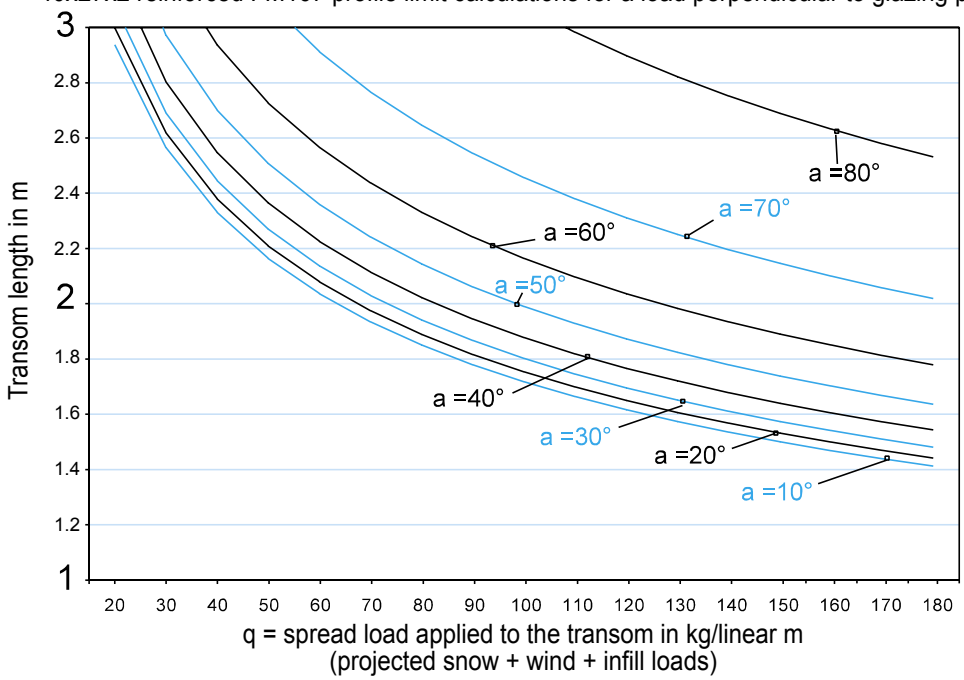
Usage charts

FM167 reinforced transoms

Chart 1 Transom choice

formula: $q = \frac{Q \times A \times B}{2 (A + B)}$

40x27x2 reinforced FM167 profile limit calculations for a load perpendicular to glazing plane

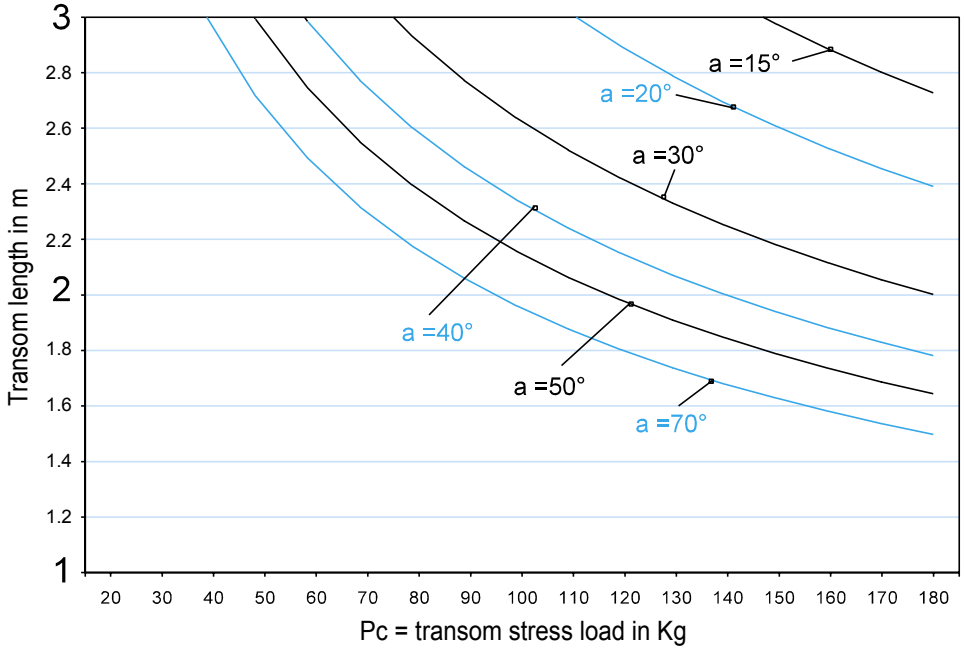


q = spread load applied to the transom in kg/linear m
(projected snow + wind + infill loads)

Chart 2 Maximum load calculation for CM025 Glass supports

formula: $Pc = (Qn + Qr) \times A \times B \times \sin a$

40x27x2 reinforced FM167 profile limit calculations for a load in glazing plane



Pc = transom stress load in Kg

gevfc014

TECHNAL®

Usage charts

FM168 transoms

Chart 1 Transom choice

formula: $q = \frac{Q \times A \times B}{2 (A + B)}$

FM168 profile limit calculations for a load perpendicular to glazing plane

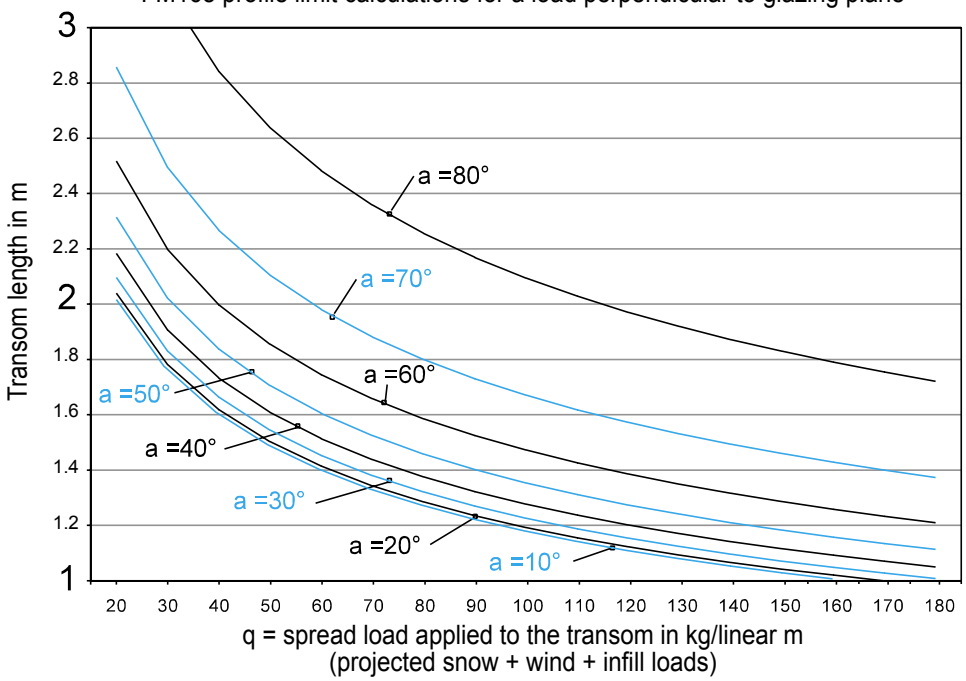
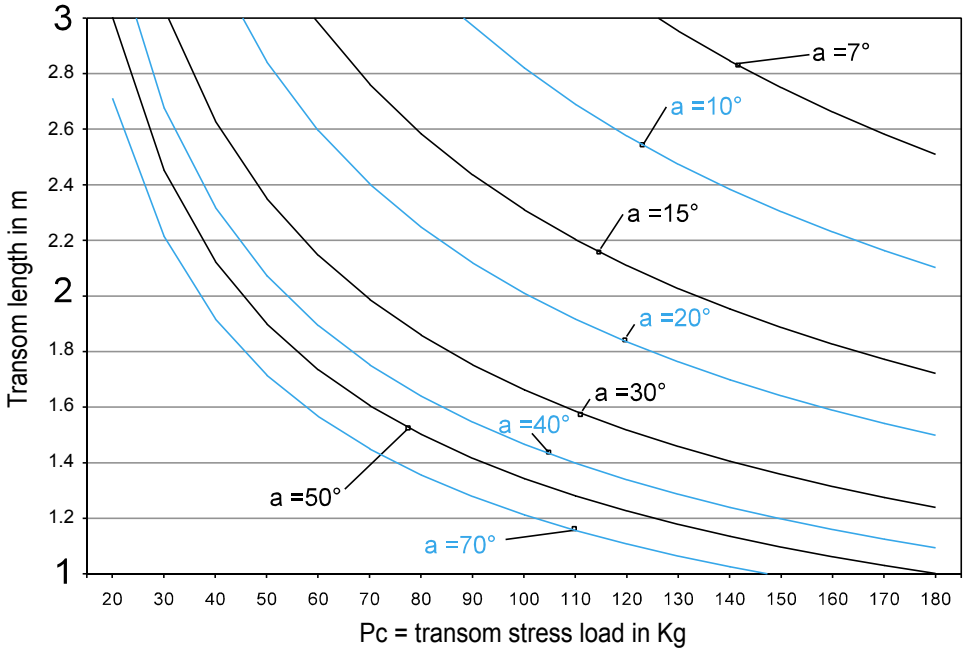


Chart 2 Maximum load calculation for CM025 Glass supports

formula: $Pc = (Qn + Qr) \times A \times B \times \sin a$

FM168 profile limit calculations for a load in glazing plane



gevfc015

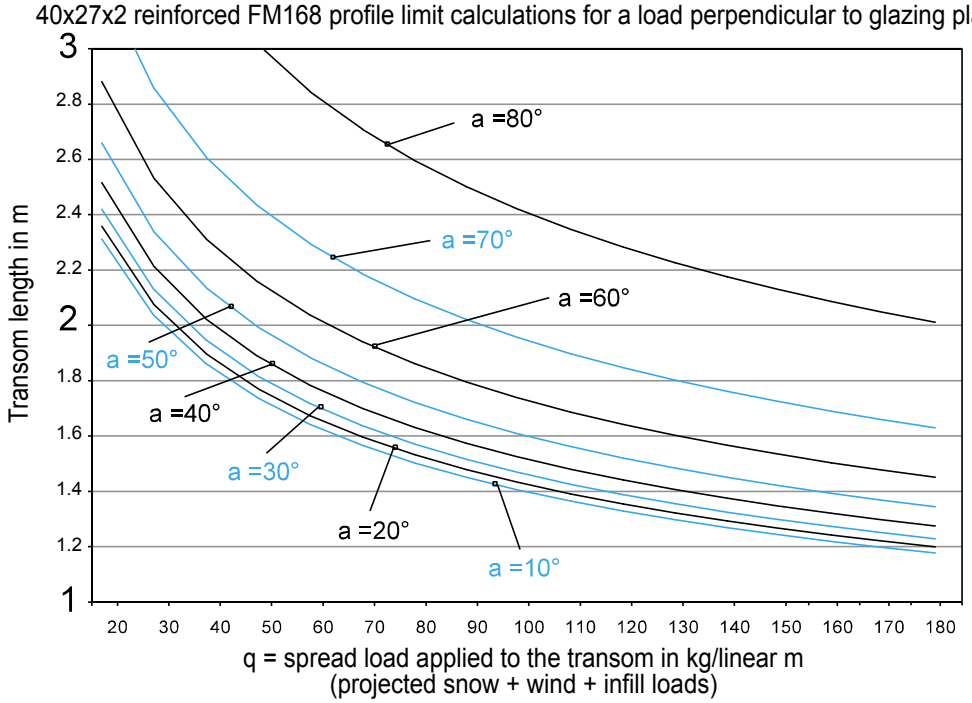
Usage charts

FM168 reinforced transoms

Chart 1 Transom choice

formula: $q = \frac{Q \times A \times B}{2 (A + B)}$

40x27x2 reinforced FM168 profile limit calculations for a load perpendicular to glazing plane

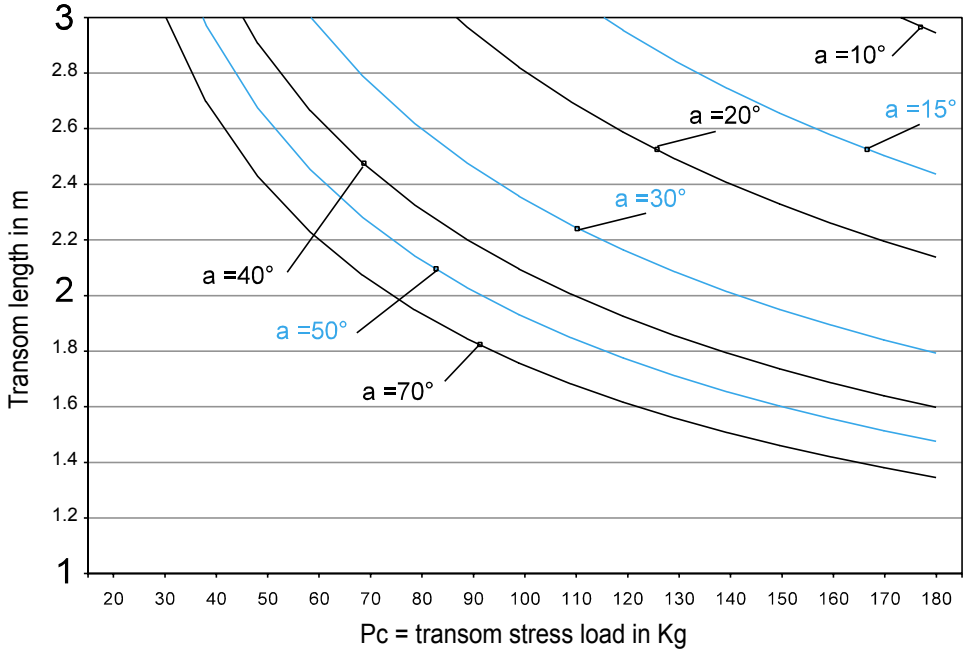


q = spread load applied to the transom in kg/linear m
(projected snow + wind + infill loads)

Chart 2 Maximum load calculation for CM025 Glass supports

formula: $Pc = (Qn + Qr) \times A \times B \times \sin a$

40x27x2 reinforced FM168 profile limit calculations for a load in glazing plane



Pc = transom stress load in Kg

gevfc016

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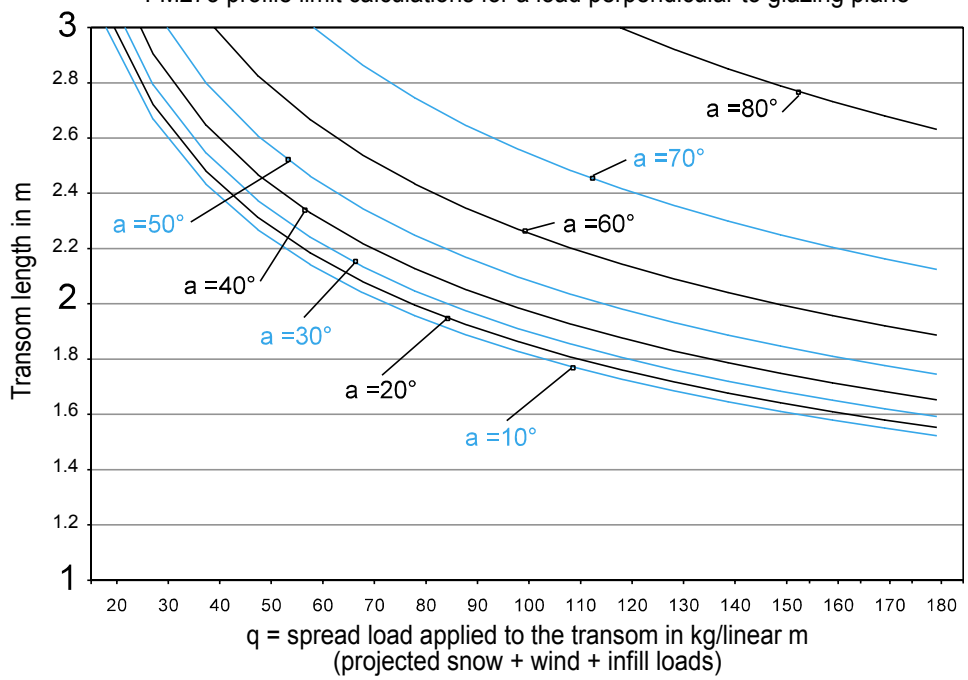
Usage charts

FM273 transoms

Chart 1 Transom choice

formula: $q = \frac{Q \times A \times B}{2 (A + B)}$

FM273 profile limit calculations for a load perpendicular to glazing plane

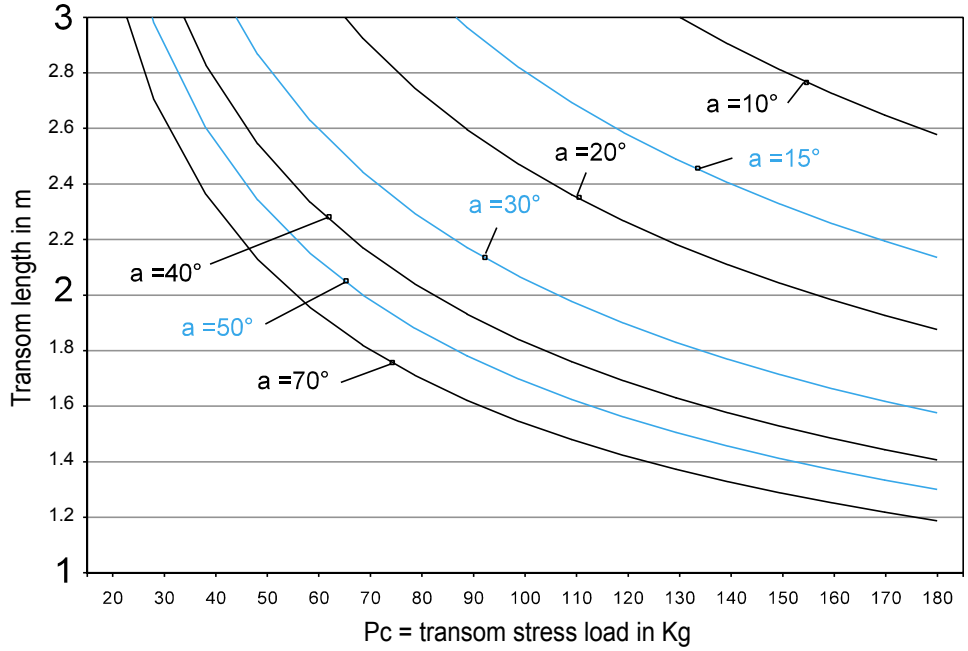


q = spread load applied to the transom in kg/linear m
(projected snow + wind + infill loads)

Chart 2 Maximum load calculation for CM025 Glass supports

formula: $Pc = (Qn + Qr) \times A \times B \times \sin a$

FM273 profile limit calculations for a load in glazing plane



Pc = transom stress load in Kg

gevfc017

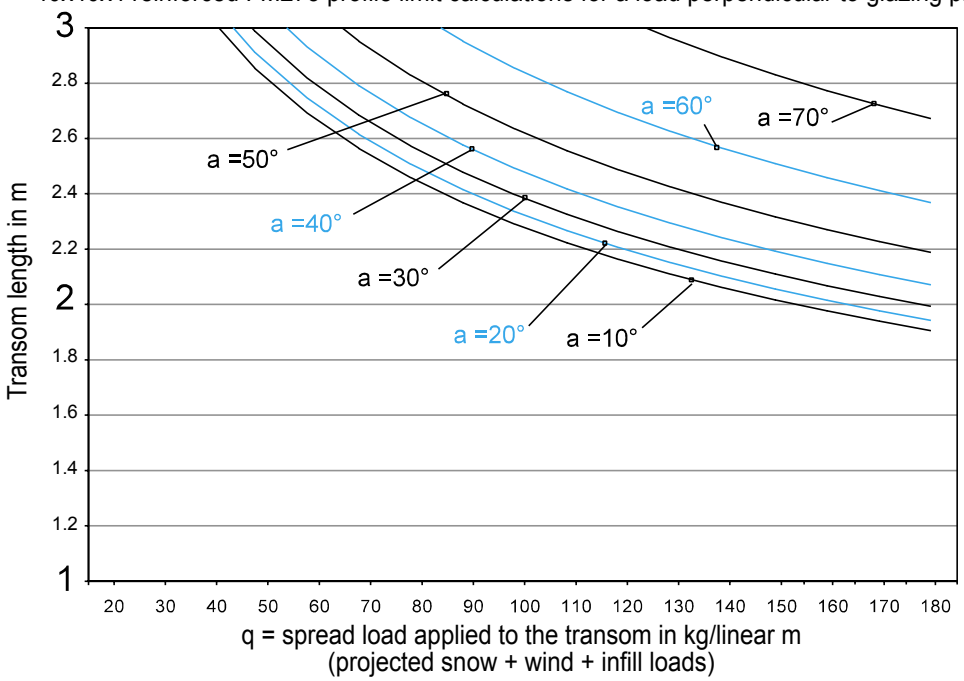
Usage charts

FM273 reinforced transoms

Chart 1 Transom choice

formula: $q = \frac{Q \times A \times B}{2 (A + B)}$

40x40x4 reinforced FM273 profile limit calculations for a load perpendicular to glazing plane

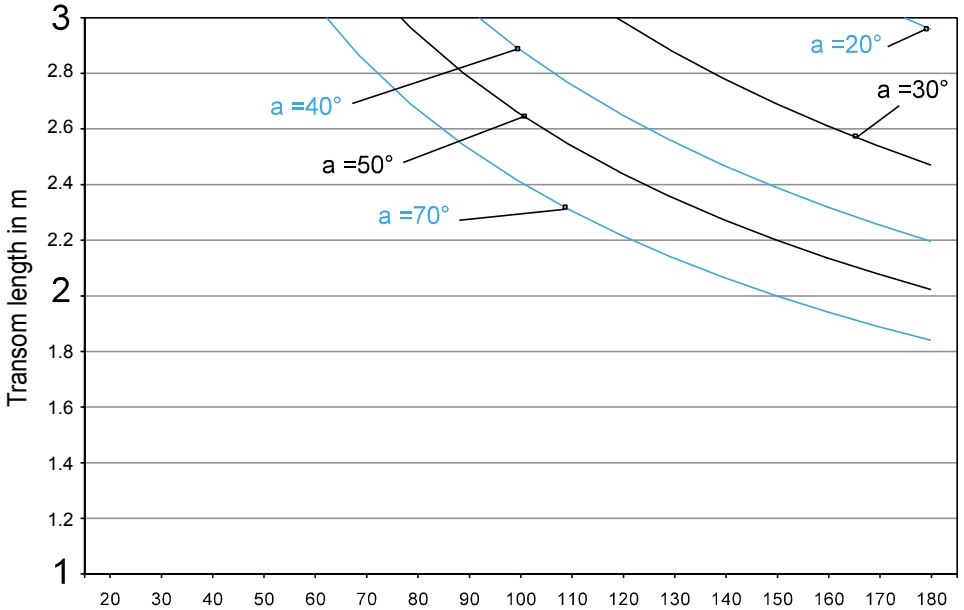


q = spread load applied to the transom in kg/linear m
(projected snow + wind + infill loads)

Chart 2 Maximum load calculation for CM025 Glass supports

formula: $Pc = (Qn + Qr) \times A \times B \times \sin a$

40x40x4 reinforced FM273 profile limit calculations for a load in glazing plane

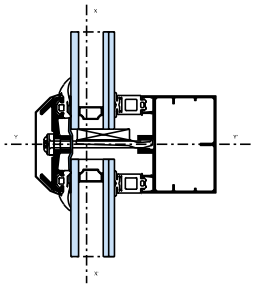


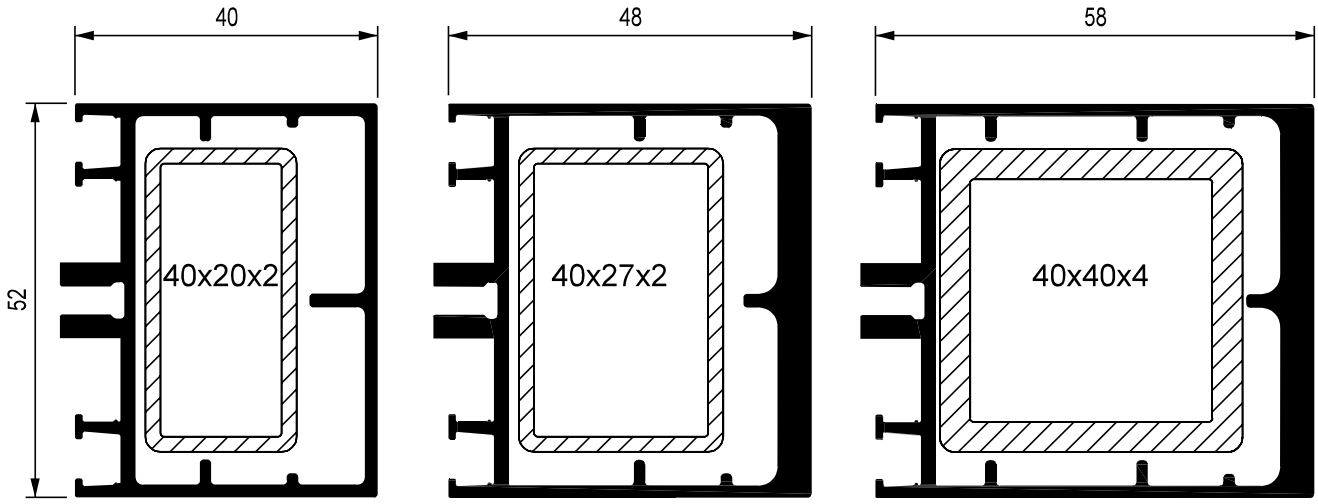
Pc = transom stress load in Kg

gevfc018

Inertia values

Grid transom profiles





FM168 **FM167** **FM273**

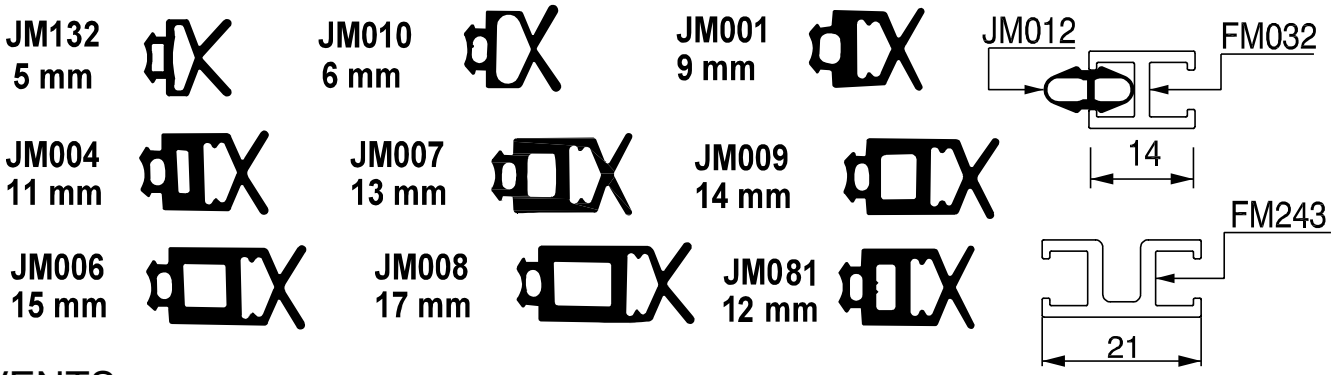
Reference	FM168		FM167		FM273	
	$\frac{I\,xx \text{ in } cm^4}{v\ I\,xx \text{ in } cm^3}$	$\frac{I\,yy \text{ in } cm^4}{v\ I\,yy \text{ in } cm^3}$	$\frac{I\,xx \text{ in } cm^4}{v\ I\,xx \text{ in } cm^3}$	$\frac{I\,yy \text{ in } cm^4}{v\ I\,yy \text{ in } cm^3}$	$\frac{I\,xx \text{ in } cm^4}{v\ I\,xx \text{ in } cm^3}$	$\frac{I\,yy \text{ in } cm^4}{v\ I\,yy \text{ in } cm^3}$
Inertia without reinforcement	$\frac{9.01\ cm^4}{4.14\ cm^3}$	$\frac{13.68\ cm^4}{5.26\ cm^3}$	$\frac{19.55\ cm^4}{6.68\ cm^3}$	$\frac{17.79\ cm^4}{6.83\ cm^3}$	$\frac{31.22\ cm^4}{9.06\ cm^3}$	$\frac{20.34\ cm^4}{7.08\ cm^3}$
Inertia with reinforcement	$\frac{13.3\ cm^4}{5.12\ cm^3}$	$\frac{26.93\ cm^4}{10.36\ cm^3}$	$\frac{28.28\ cm^4}{10.88\ cm^3}$	$\frac{34.16\ cm^4}{13.14\ cm^3}$	$\frac{64.43\ cm^4}{24.78\ cm^3}$	$\frac{53.55\ cm^4}{20.60\ cm^3}$

gevfc021

Infills

Fixed frame and vent infills

Infill	Gasket for mullion	Gasket for transom
44 - 2	JM006 + FM243 Glazing bead	JM010 + FM243 Glazing bead
55 - 2	JM007 + FM243 Glazing bead	JM007 + FM032 Glazing bead
66 - 2	JM004 + FM243 Glazing bead	JM004 + FM032 Glazing bead
20 mm	JM004 + FM032 Glazing bead	JM008
23 mm	JM001 + FM032 Glazing bead	JM009
28 mm	JM008	JM001
31 mm	JM009	JM010
32 mm	JM009	JM010



VENTS

Infill	External gasket	Internal gasket	Reducer fitting Bead clip gasket
6 mm	W113 + black silicone sealant (Category 1 elastomer such as TREMCO Proglaze C)	JM006	FM032 + JM012
8 mm		JM007	FM032 + JM012
9 mm		JM081	FM032 + JM012
10 mm / 11 mm		JM004	FM032 + JM012
12 mm / 13 mm		JM001	FM032 + JM012
14 mm / 16 mm		JM010	FM032 + JM012
18 mm		JM008	without
20 mm		JM006	without
21 mm		JM009	without
22 mm		JM007	without
23 mm		JM081	without
24 mm		JM004	without
26 mm		JM001	without
28 mm / 30 mm		JM010	without

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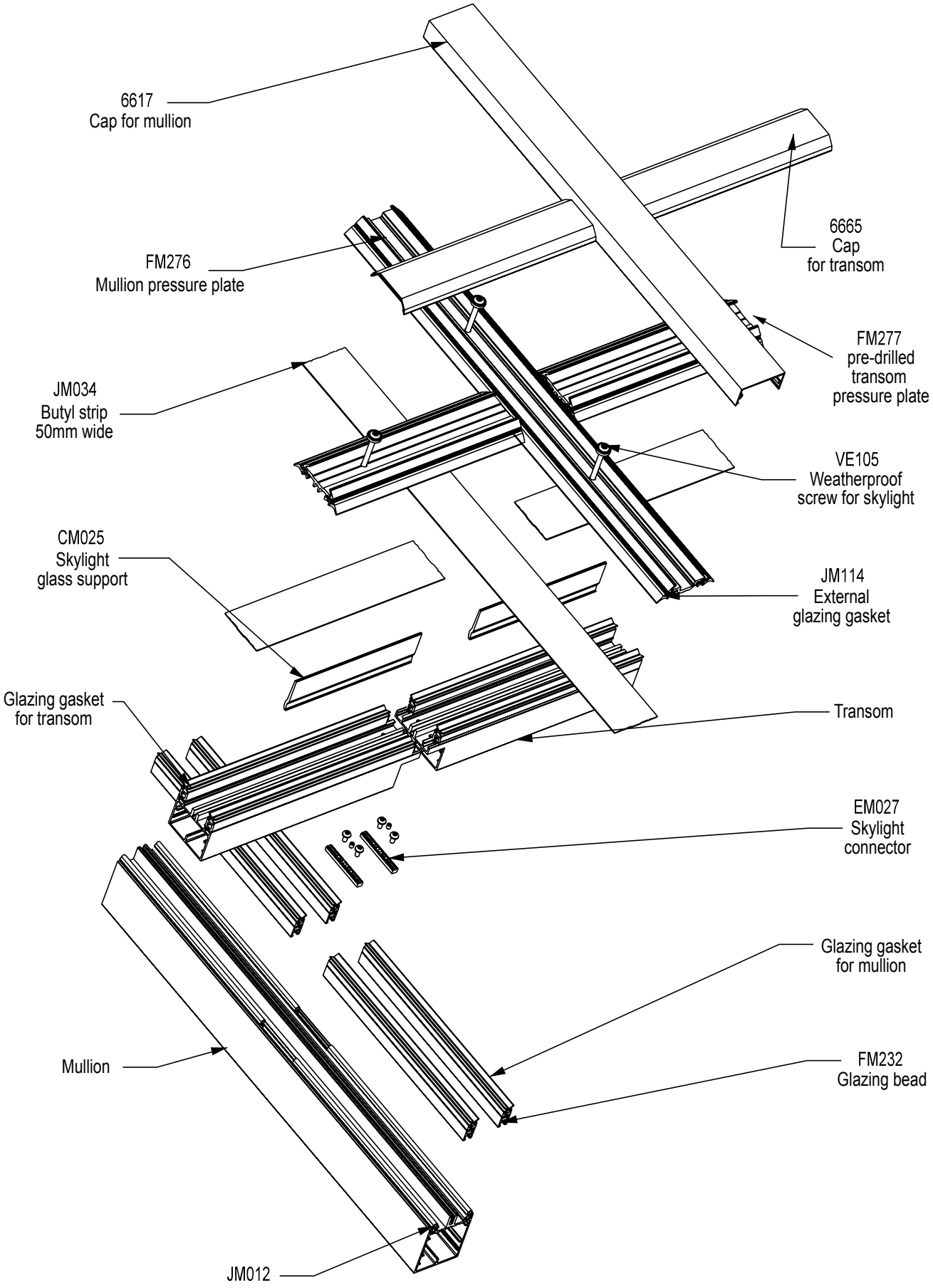
Construction overview

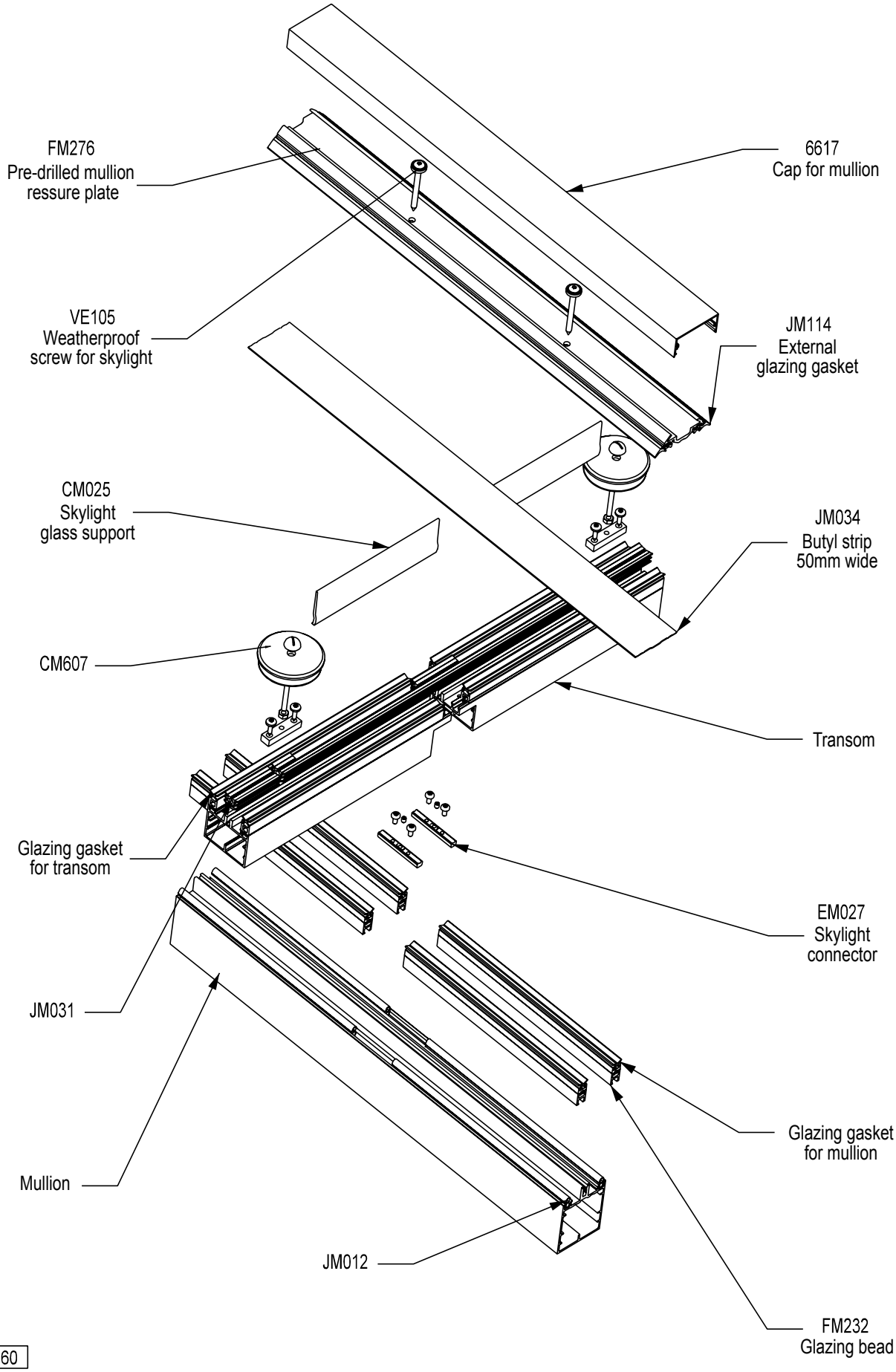
Grid effect



gevfc023

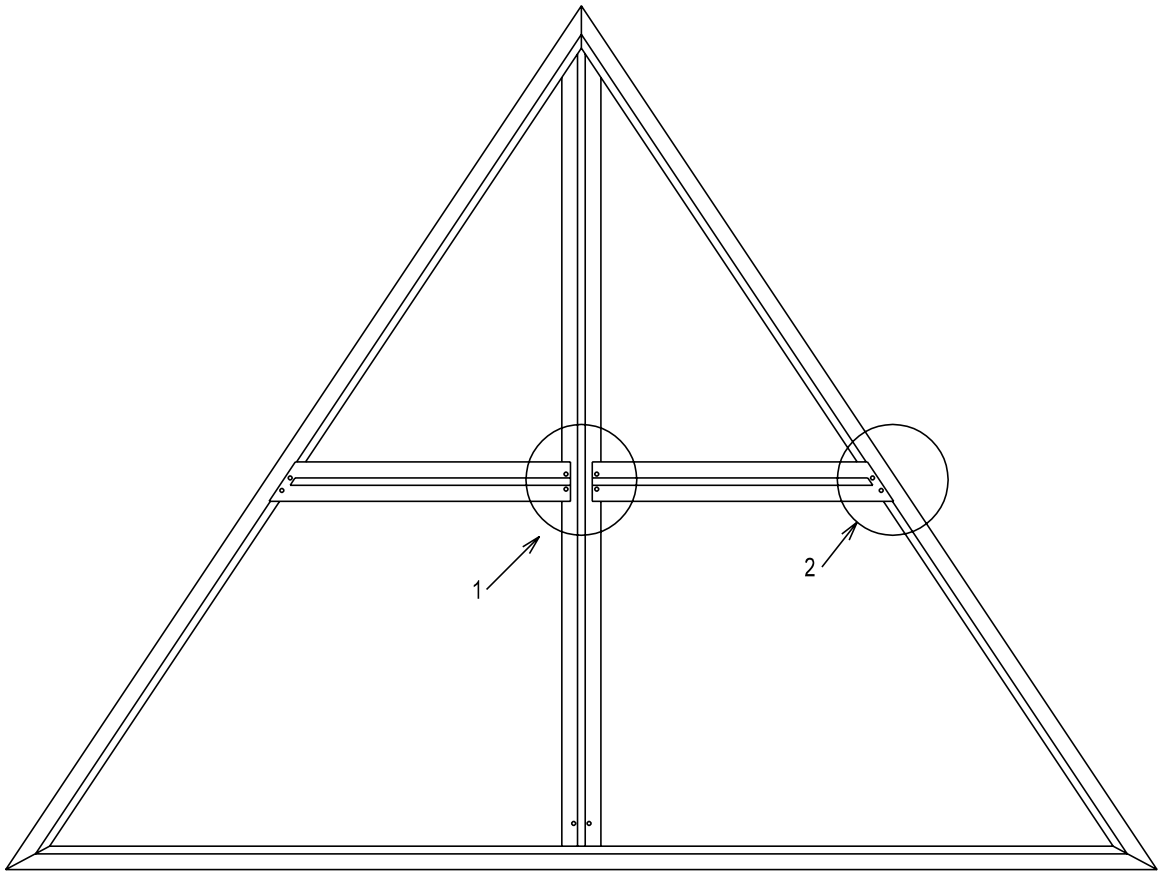
Construction overview

Vertical line effect



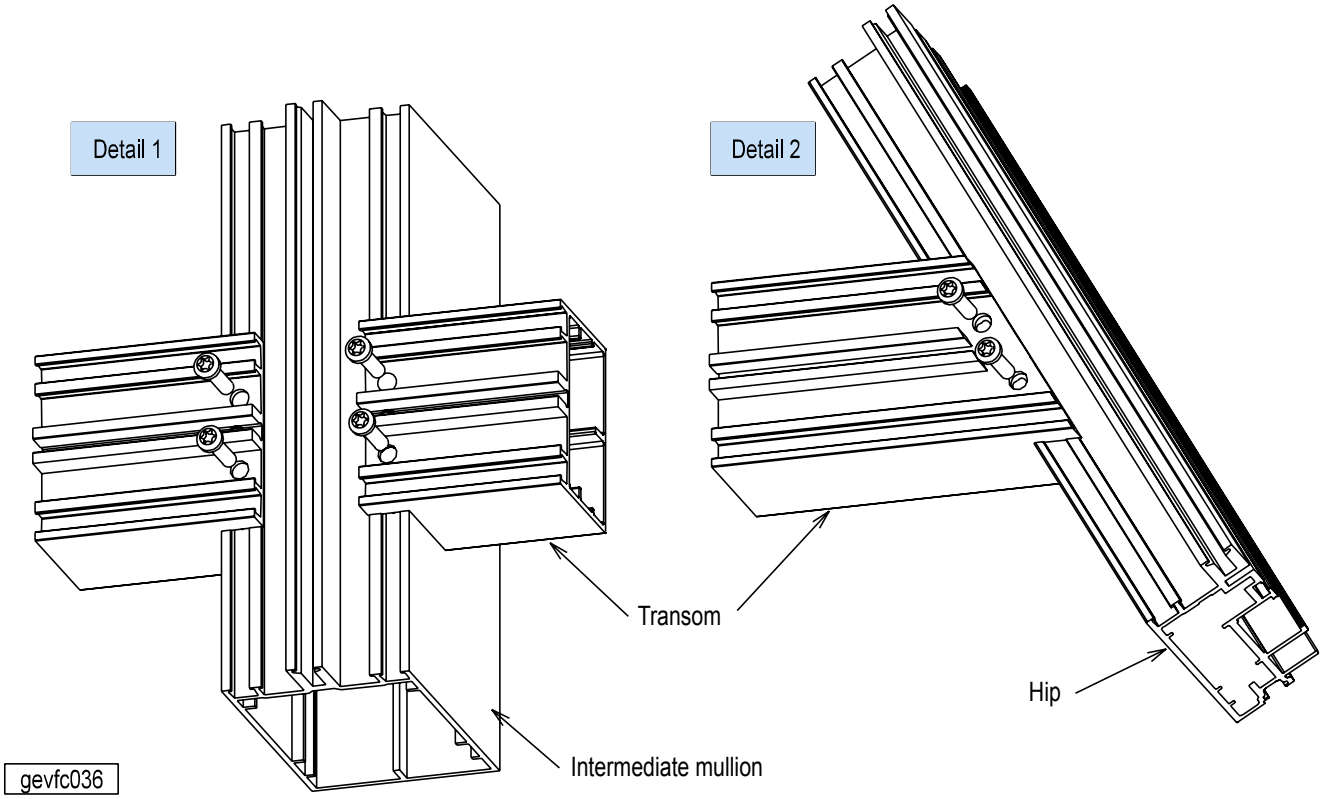
Assembly methods

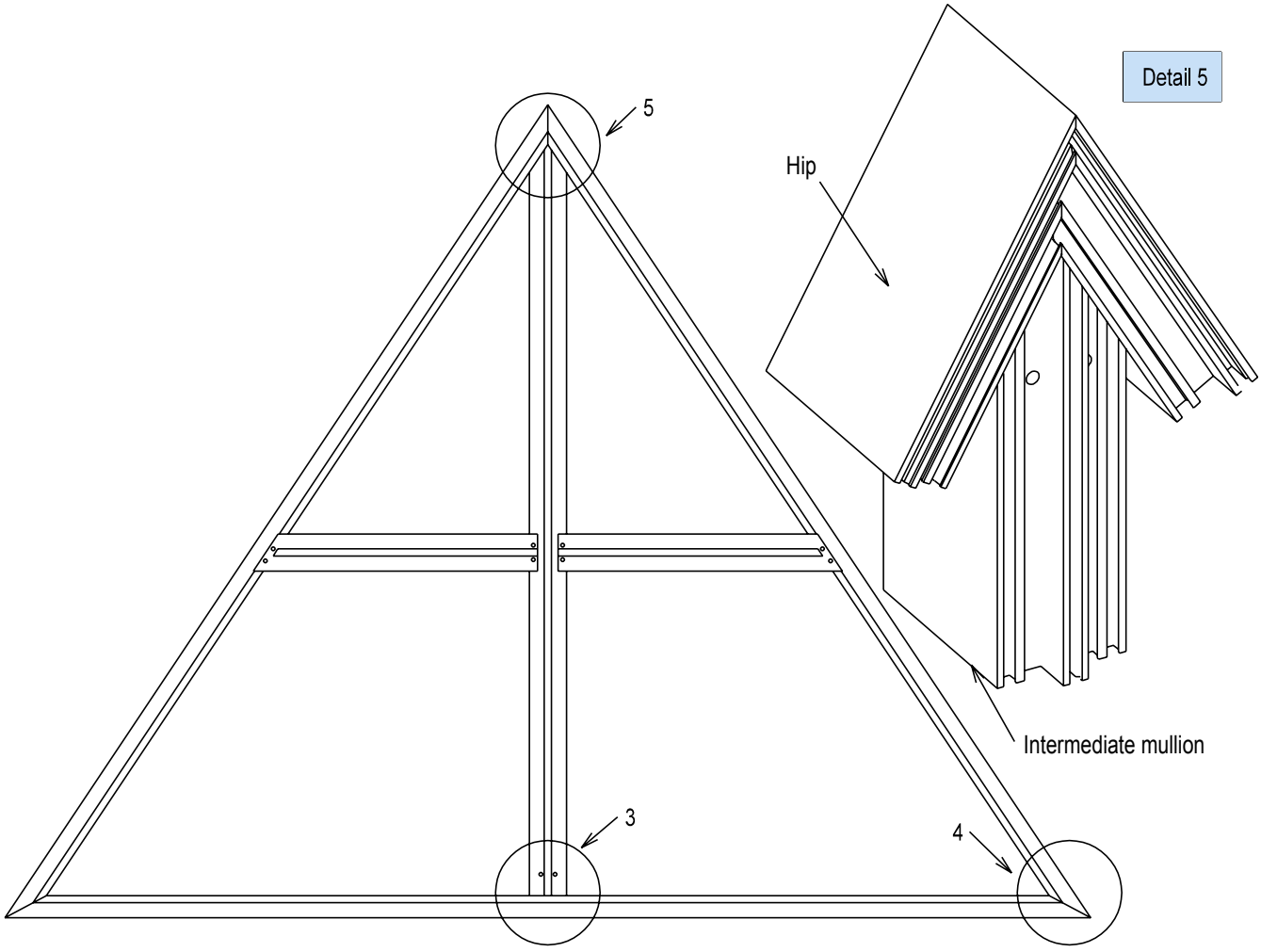
Assembly details



PYRAMID SKYLIGHT

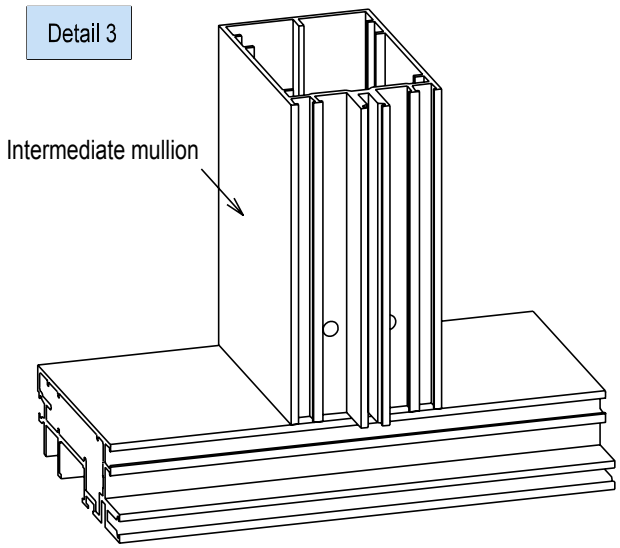
PYRAMID

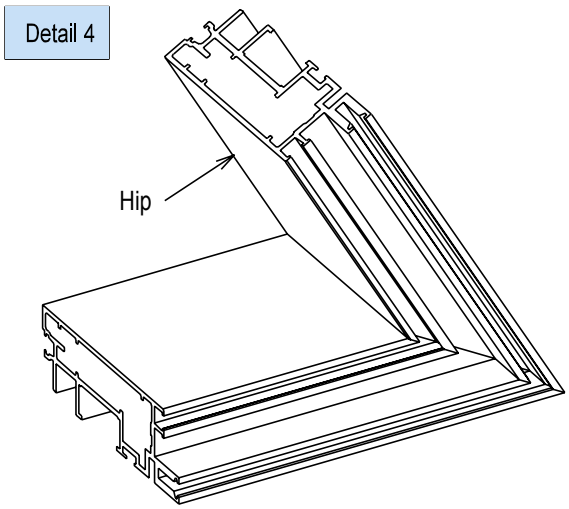




PYRAMID

PYRAMID





gevfc037

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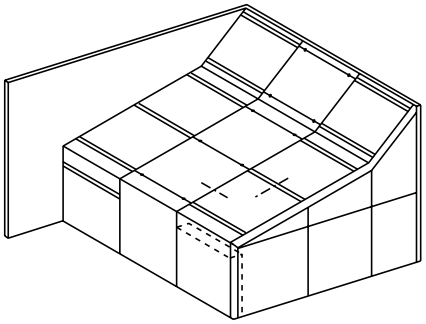
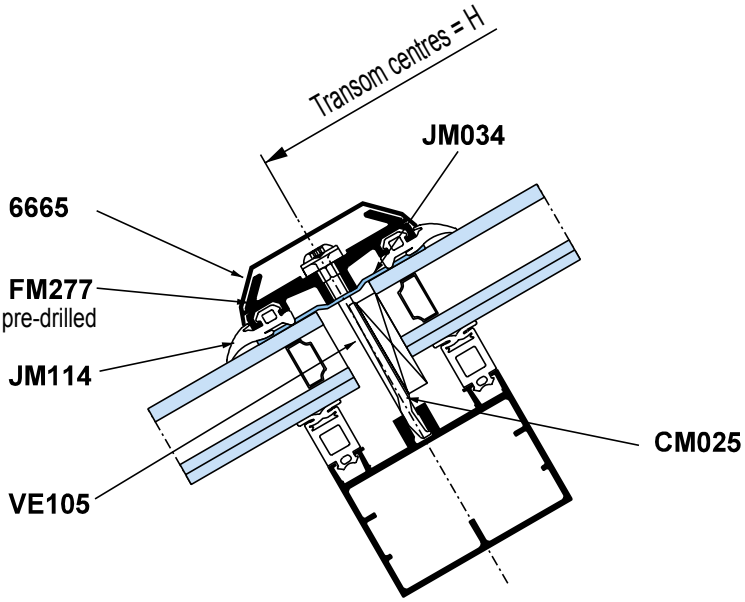
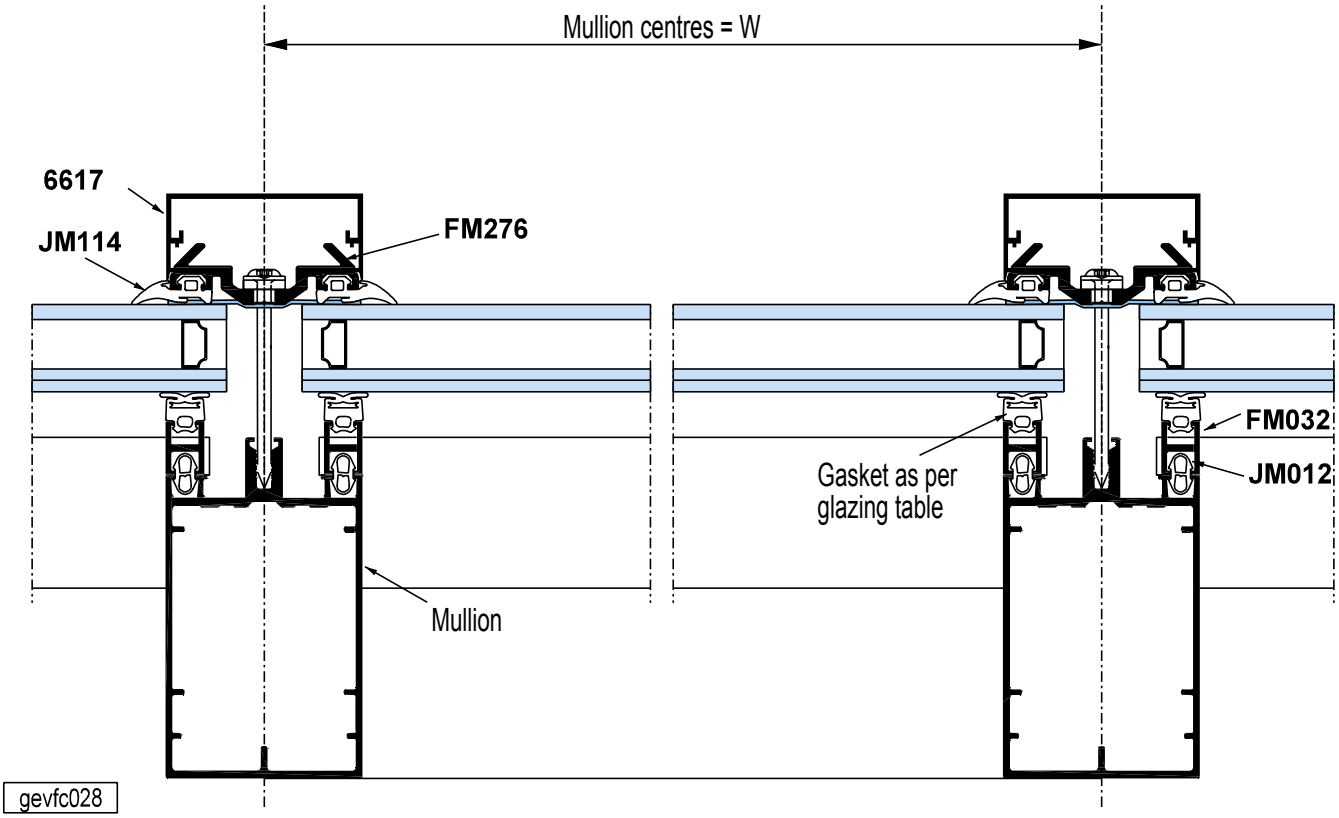
Applications

Grid effect fixed frame





Glazing dimensions
Height = H-16
Width = W-20



PROFILES

cutting allowance = 0.5mm

Reference	Preparation	Quantity	Cutting formula
Mullion as per inertia		As per grid	H as per grid
Transom as per inertia		As per grid	W - 30
FM032 Glazing bead		As per infill	H - 52 W - 30
Mullion cap		As per grid	H as per grid
Transom cap		As per grid	W - 53
FM276 Mullion pressure plate		As per grid	H as per grid
FM277 Transom pressure plate			W - 61

WEATHERING PROFILES

Reference	Quantity and dimensions
Internal glazing gasket as per table	2W/ 2 H
JM012 Bead clip gasket for FM032	See glazing bead
JM114 External glazing gasket	2W/ 2 H
JM034 Butyl strip 50mm wide	H + W

ACCESSORIES

Reference	Quantity	Description
EM027	2 per trans.	Skylight connector
CM025	2 per trans.in accord -ance with DTU 39	Skylight glass support
VE105	1 / 200 mm	Weatherproof screw for skylight

TOOLS

MACHINING FOR FRONT MOUNTING

Reference	Description
OM007	Drilling jig for mullion fixing hole
OM005	Removable tool

OM023	Pair of gasket scissors
OM042	Gasket roller
W150	Butyl cartridge, black or grey

gevfc029

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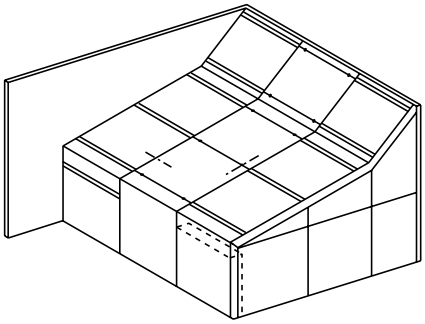
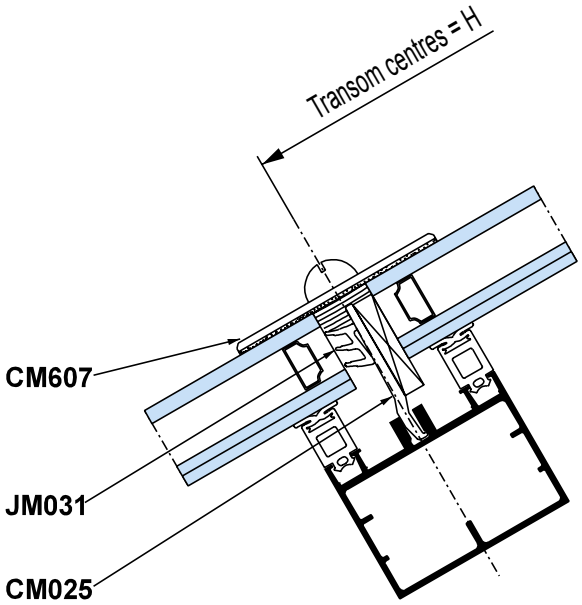
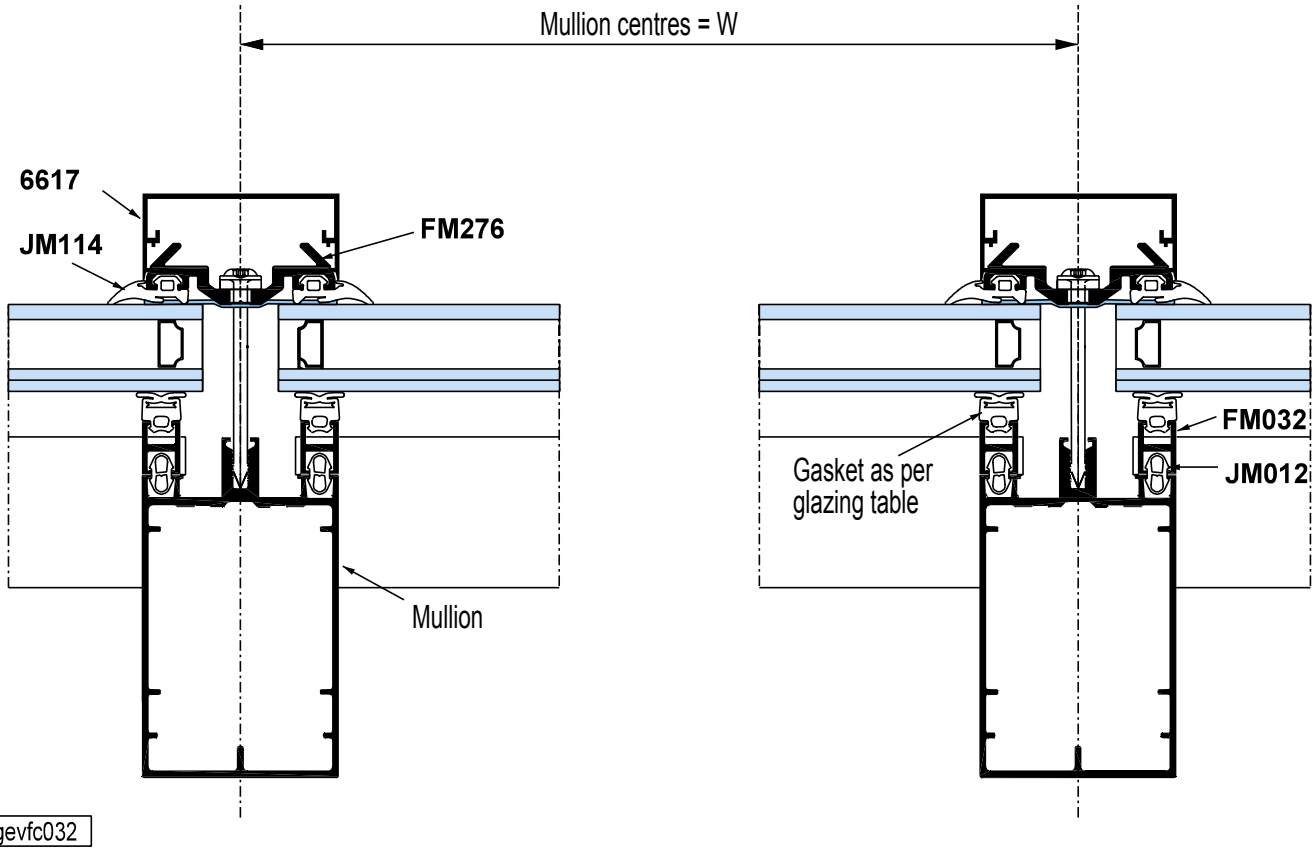
Applications

Vertical line effect fixed frame





Glazing dimensions
Height = H-16
Width = W-20



gevfc032

PROFILES

cutting allowance = 0.5mm

Reference	Preparation	Quantity	Cutting formula
Mullion as per inertia		As per grid	H as per grid
Transom as per inertia		As per grid	W - 52
FM032 Glazing bead		As per infill	H - 52 W - 30
Mullion cap		As per grid	H as per grid
FM276 Mullion pressure plate		As per grid	H as per grid

WEATHERING PROFILES

Reference	Quantity and dimensions
Internal glazing gasket as per table	2W/ 2 H
JM012 Bead clip gasket	See glazing bead
JM114 External glazing gasket	2 H
JM031 Foam seal for skylight 6-11mm clearance	W
JM034 Butyl strip 50mm wide	H

ACCESSORIES

Reference	Quantity	Description
EM027	2 per trans.	Skylight connector
CM025	2 per trans.in accord -ance with DTU 39	Skylight glass support
CM607	1 per trans.	Horizontal pressure block for vertical line skylight
VE105	1 / 200 mm	Weatherproof screw for skylight

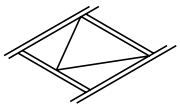
TOOLS

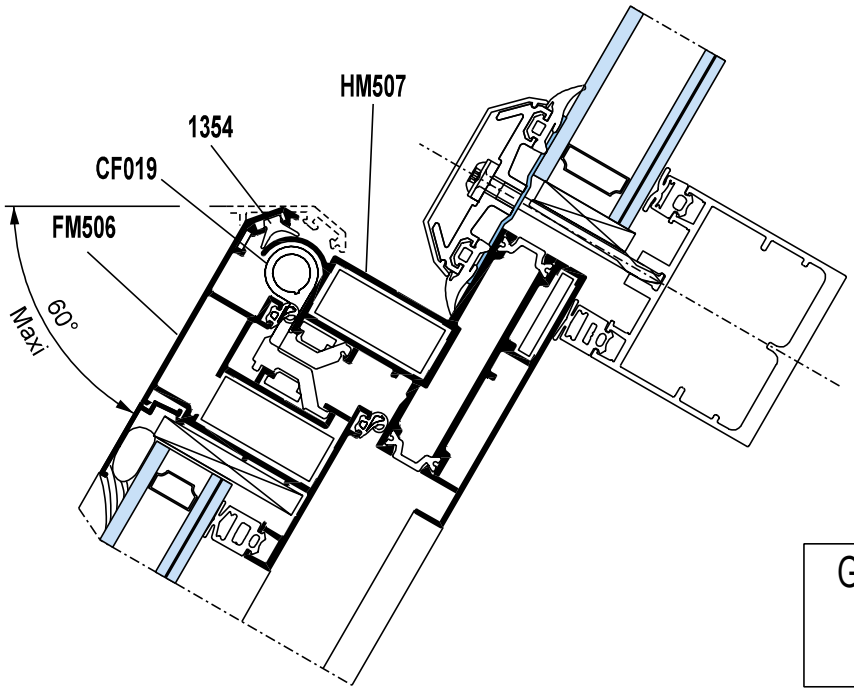
Reference	Description
OM007	Drilling jig for mullion fixing hole
OM005	Removable tool
OM023	Pair of gasket scissors
OM042	Gasket roller
W150	Butyl cartridge, black or grey

gevfc033

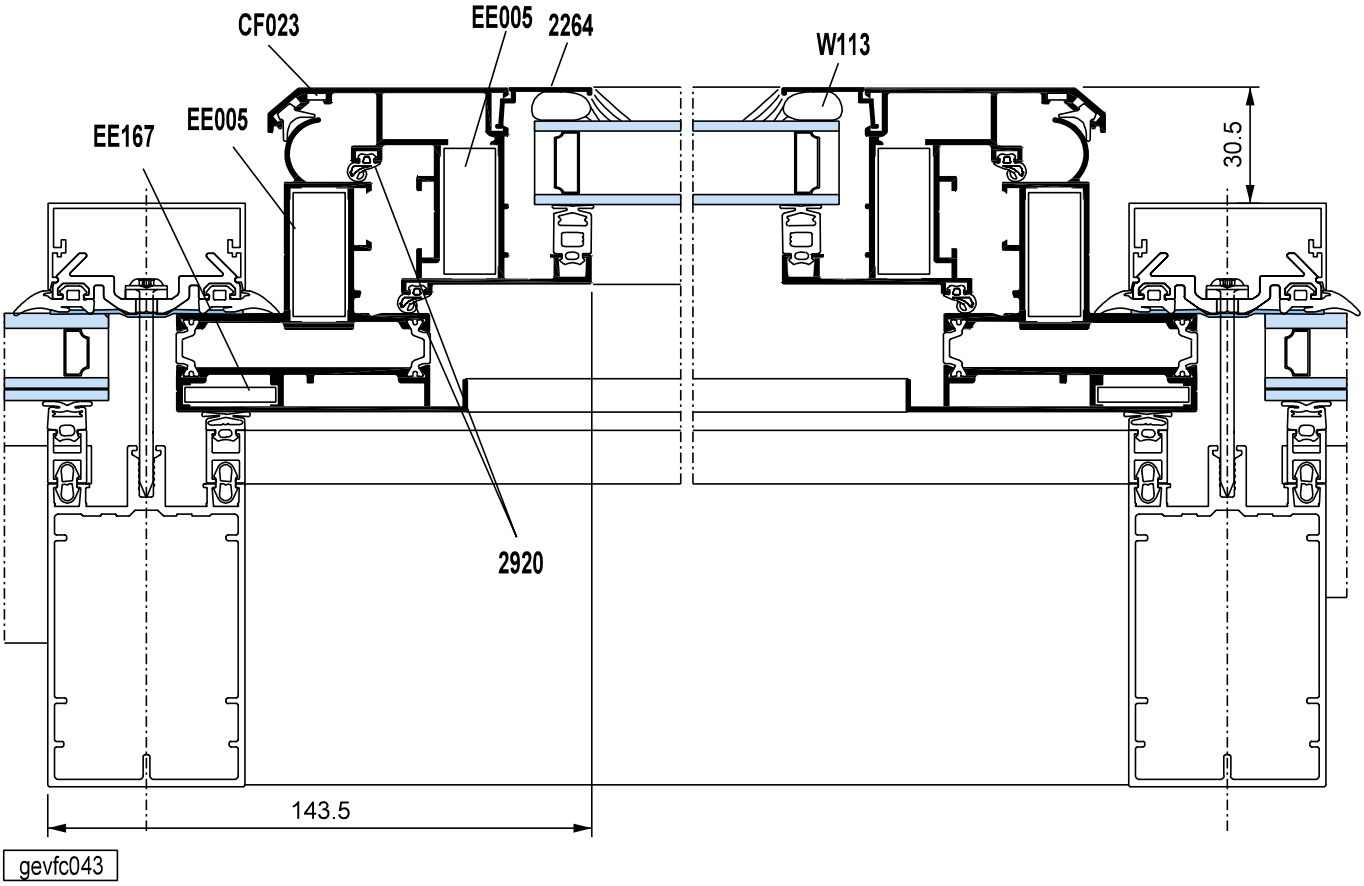
Applications

Conventional roof light



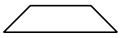
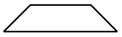
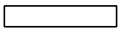
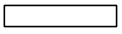
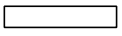


Glazing dimensions
Height = H-204
Width = W-204



VENT PROFILES

cutting allowance = 0.5mm

Reference		Preparation	Quantity	Cutting formula
FM506	Vent frame		2 2	W - 64 H - 64
HM507	Fixed frame		2 2	W - 16 H - 16
2264	External glazing bead		2 2	W - 235 H - 191
FM032	for mullion		2	H - 52
FM032	Glazing bead as per infill		2 2	W - 235 H - 215

VENT WEATHERING PROFILES

Reference		Quantity and dimensions
JM010	6mm internal gasket	2 H
JM004	11mm internal gasket	2 W
1354	Weatherpile gasket for rooflight	2 W/ 2 H
2920	Rebate gasket for rooflight	4 W/ 4 H
JM012	Bead clip gasket for glazing for mullion	2 W/ 2 H 2 H
	Internal glazing gasket as per table	2 W/ 2 H
W113	Foam seal 15mm dia.	2 W/ 2 H

ACCESSORIES

Reference	Quantity	Description
EE005	8	Self-locating corner cleat 15x35
EE021	4	Self-locating corner clear 13.2x20
EE167	4	Crimp corner cleat 25x5
CF023	4	Rebate bracket
CF019	2	Standard hinge

Reference	Quantity	Description
2105 + 2106	1	Electric opening mechanism set + Opening mechanism fixing set
or 1905		Manual opening mechanism
or 2919+ 3229		Electric chain opening mechanism + Transformer

gevfc044

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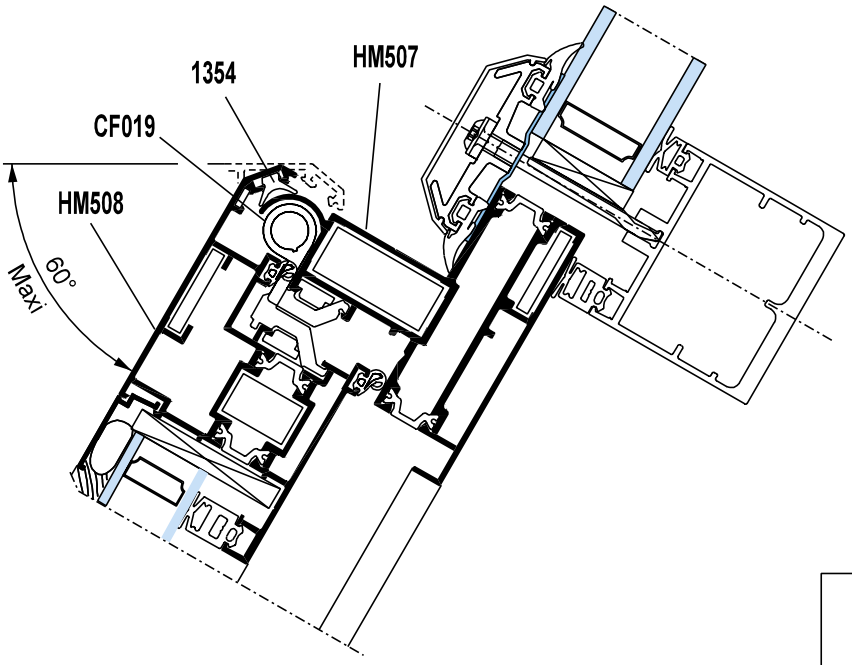
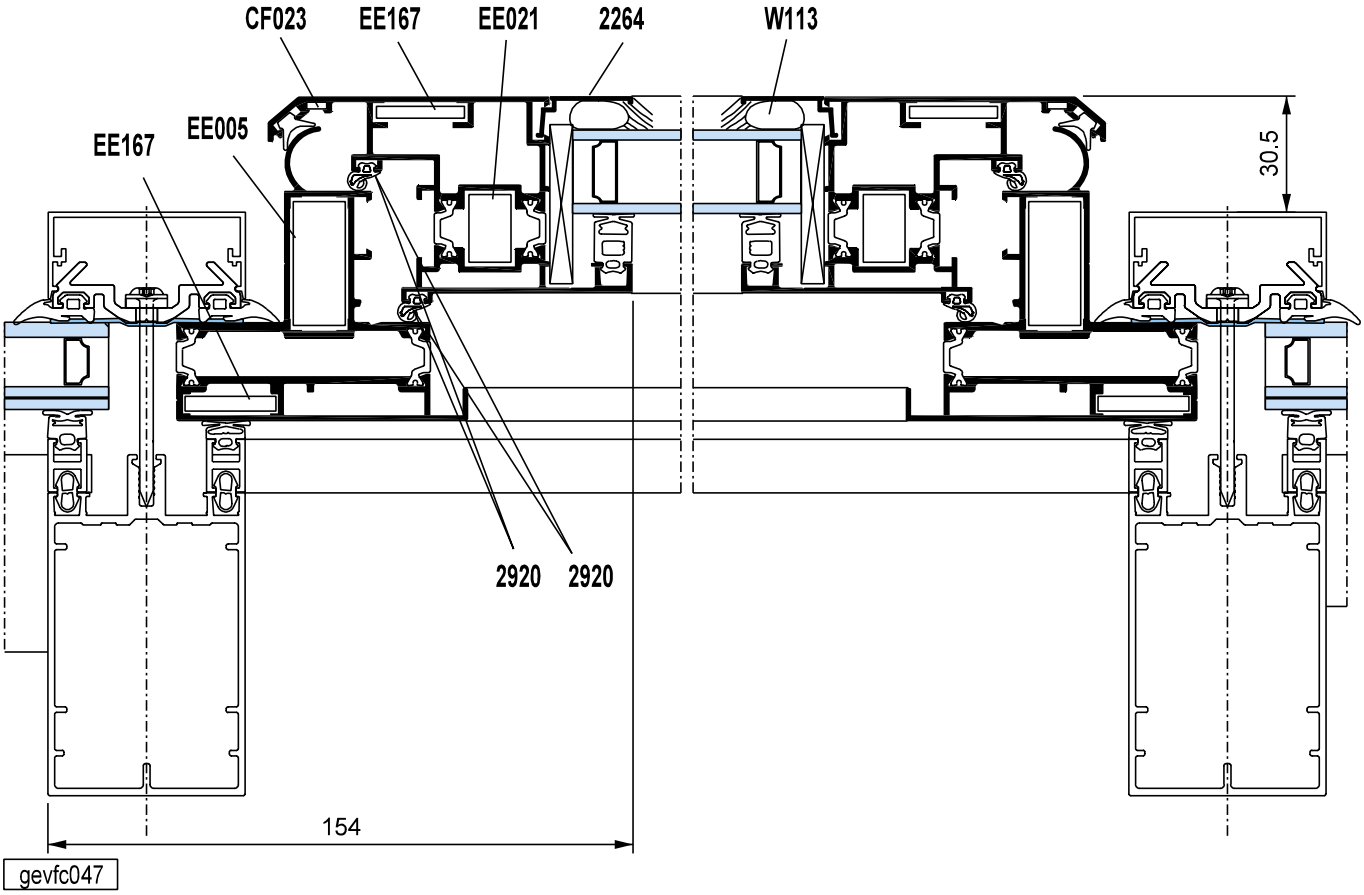
Applications

Rooflight with thermal break

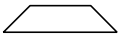
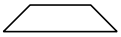
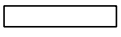
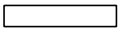
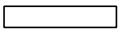


Glazing dimensions
Height = H-226
Width= W-226



VENT PROFILES

cutting allowance = 0.5mm

Reference		Preparation	Quantity	Cutting formula
HM508	Vent frame		2 2	W - 64 H - 64
HM507	Fixed frame		2 2	W - 16 H - 16
2264	External glazing bead		2 2	W - 257 H - 213
FM032	for mullion		2	H -52
FM032	Glazing bead as per infill		2 2	W - 257 H - 237

VENT WEATHERING PROFILES

Reference		Quantity and dimensions
JM010	6mm internal gasket	2 H
JM004	11mm internal gasket	2 W
1354	Weatherpile gasket for rooflight	2W/ 2 H
2920	Rebate gasket for rooflight	4W/ 4 H
JM012	Bead clip gasket for glazing for mullion	2W/ 2 H 2 H
	Internal glazing gasket as per table	2W/ 2 H
W113	Foam seal 15mm dia.	2W/ 2 H

ACCESSORIES

Reference	Quantity	Description
EE005	4	Self-locating corner cleat 15x35
EE021	4	Self-locating corner clear 13.2x20
EE167	8	Crimp corner cleat 25x5
CF023	4	Rebate bracket
CF019	2	Standard hinge

Reference	Quantity	Description
2105 + 2106	1	Electric opening mechanism set + Opening mechanism fixing set
or 1905		Manual opening mechanism
or 2919+ 3229		Electric chain opening mechanism + Transformer

gevfc048

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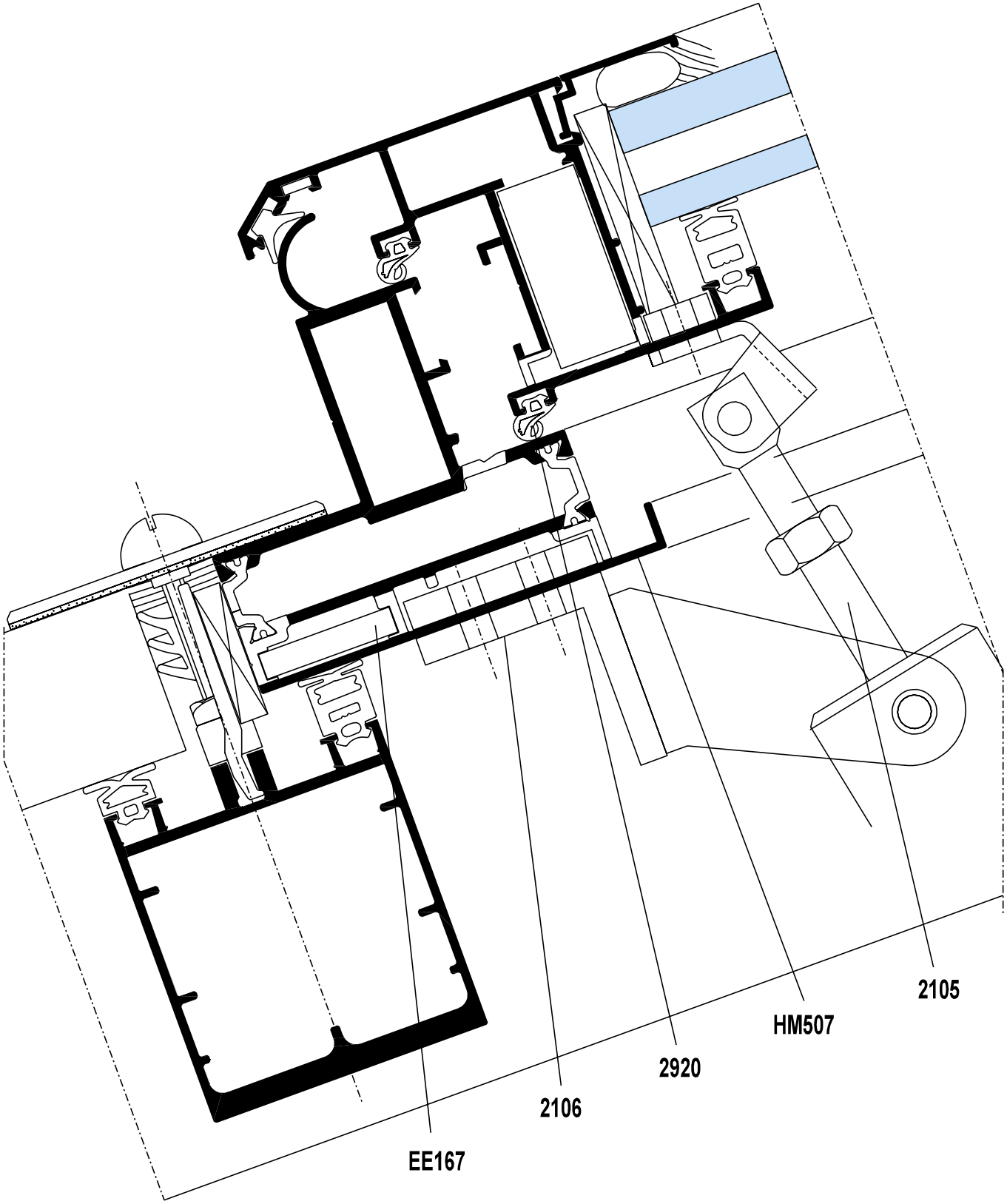
Options

Electric opening mechanism 2105 installation on rooflight

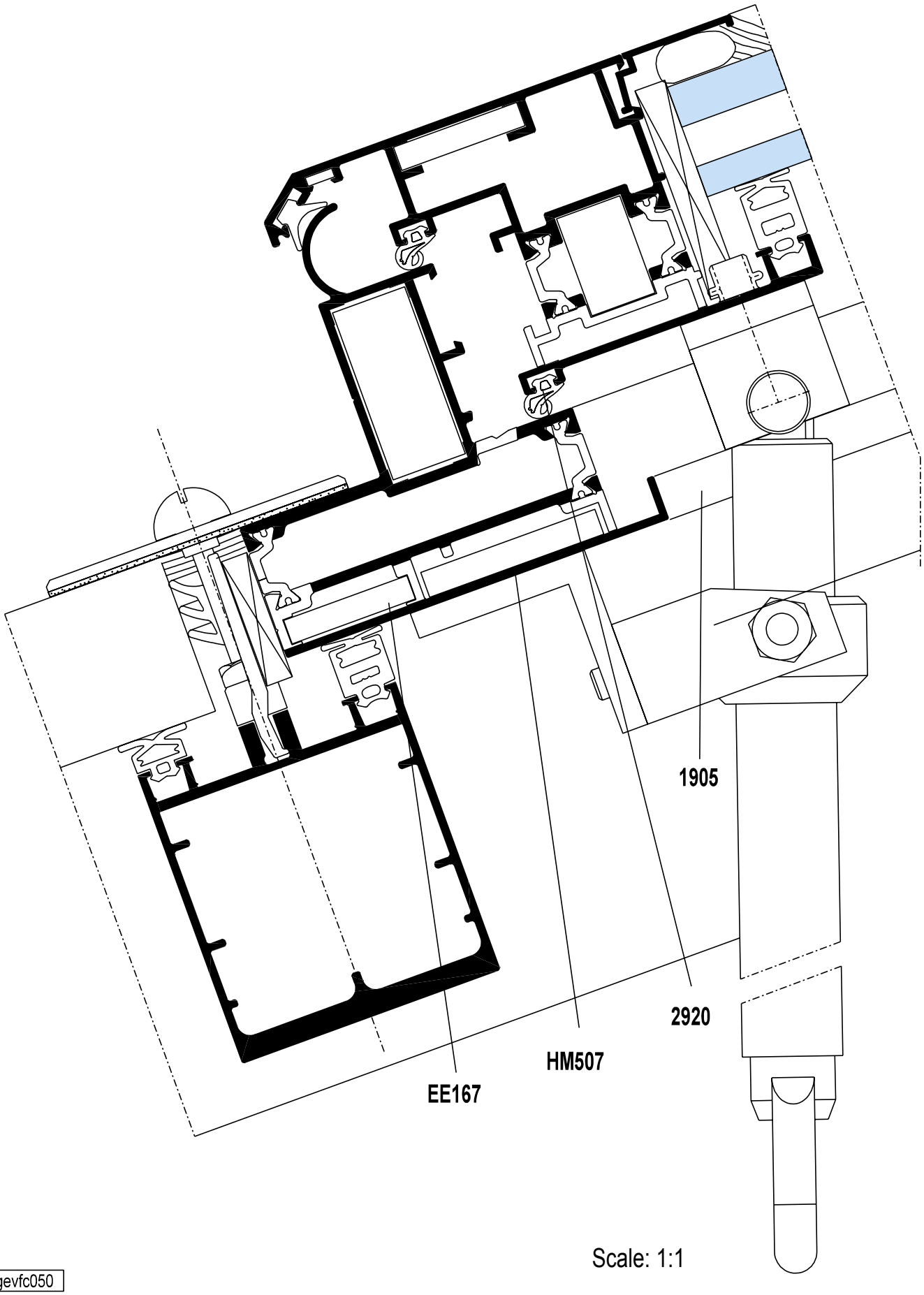


Scale: 1:1

gevfc049

Options

Manual opening mechanism 1905 installation on rooflight



Scale: 1:1

gevfc050

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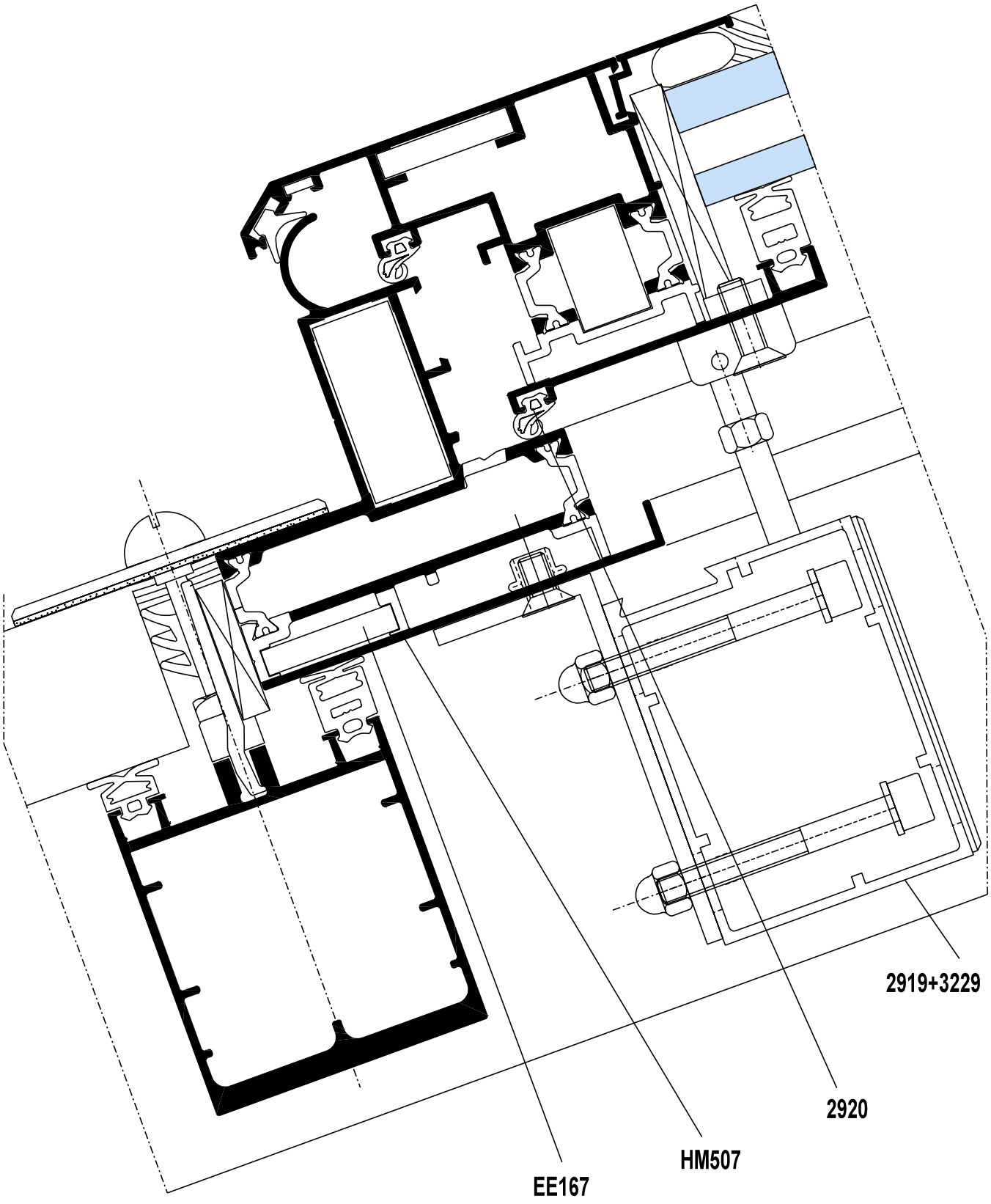
Options

Electric chain opening mechanism 2919 installation on rooflight

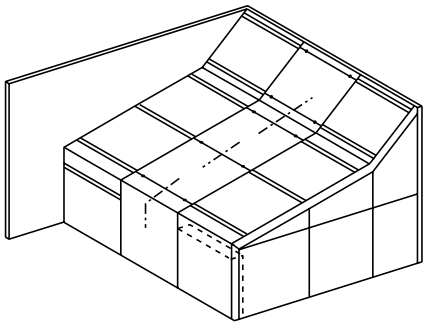


Scale: 1:1

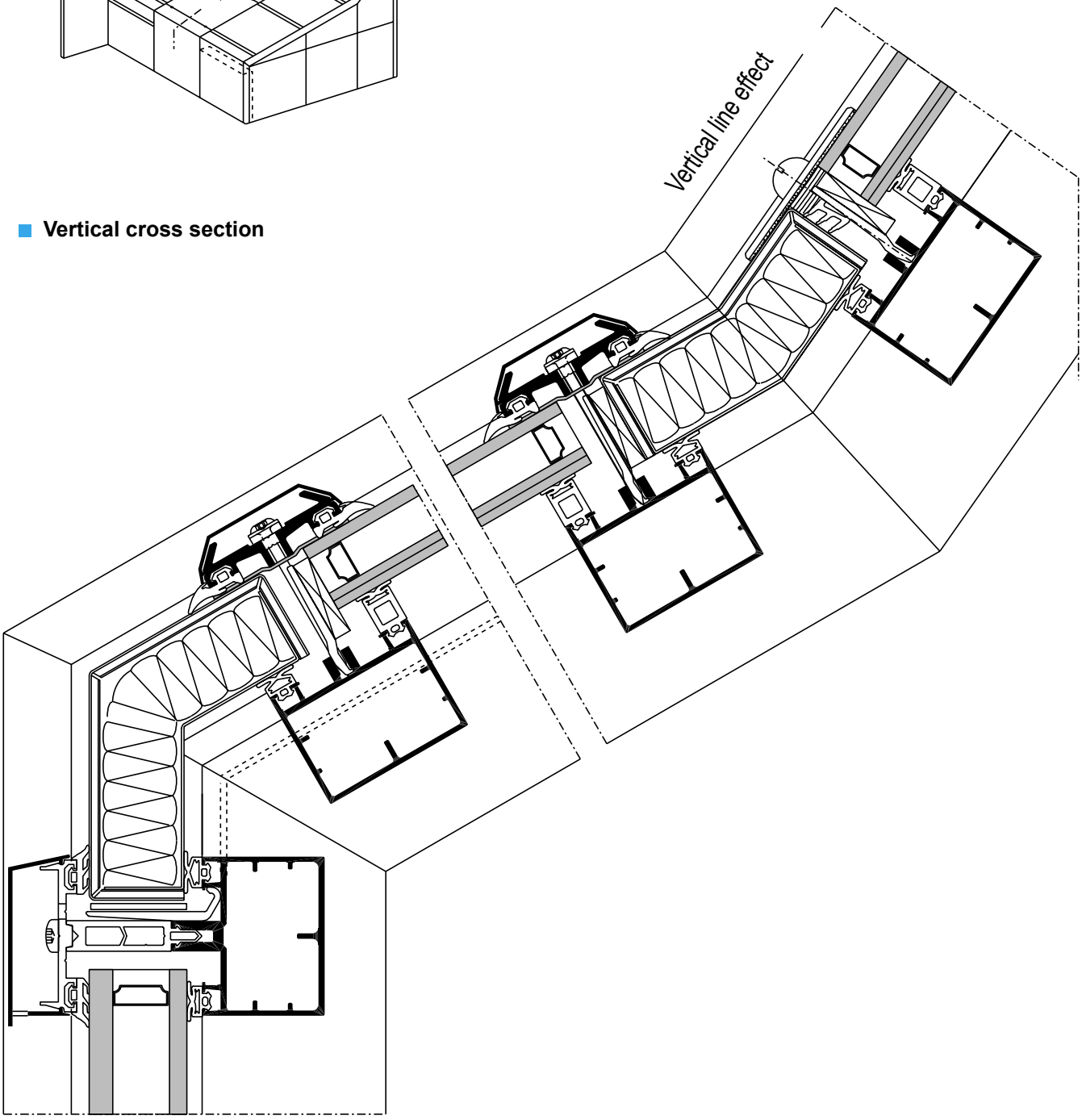
gevfc051

Installation examples

Rooflight



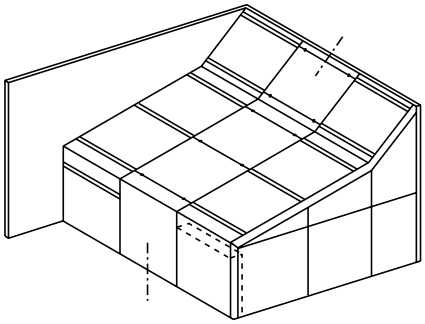
- **Vertical cross section**



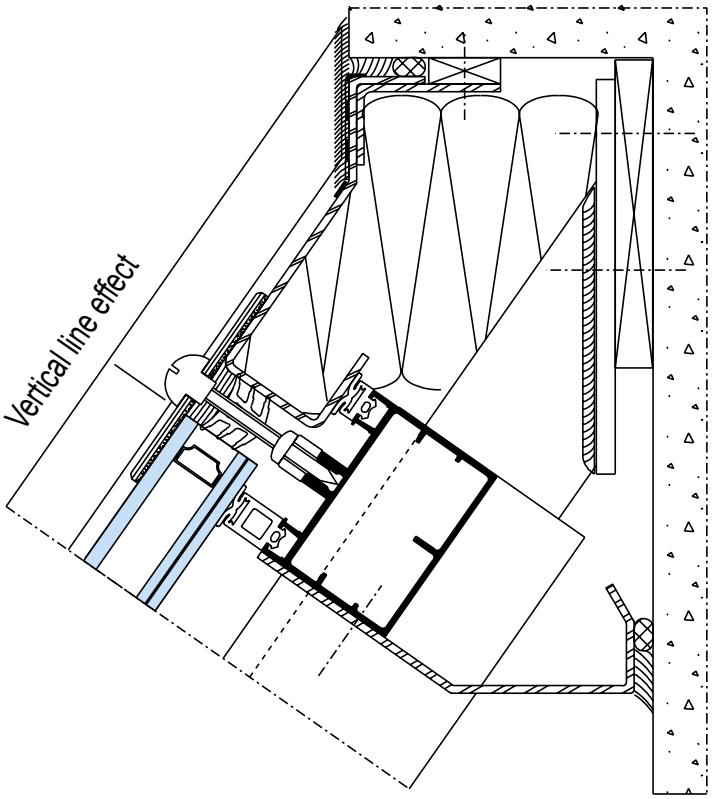
TECHNAL®

Installation examples

Rooflight

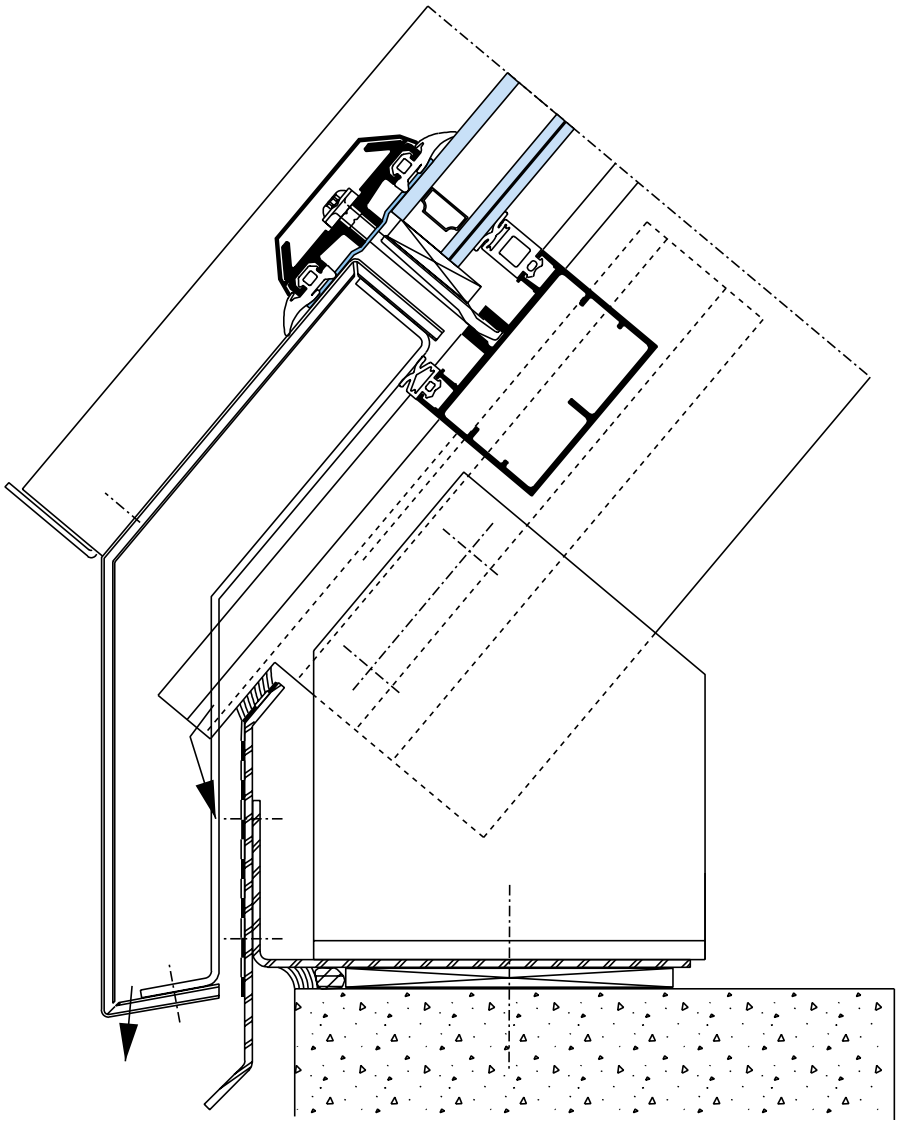


Vertical cross section



gevfc025

Vertical cross section

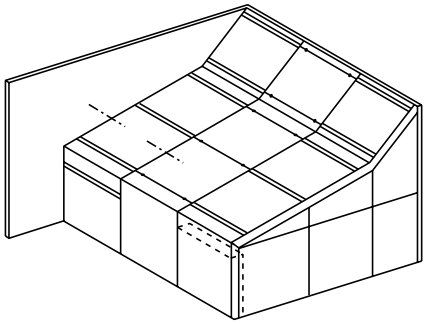


gevfc039

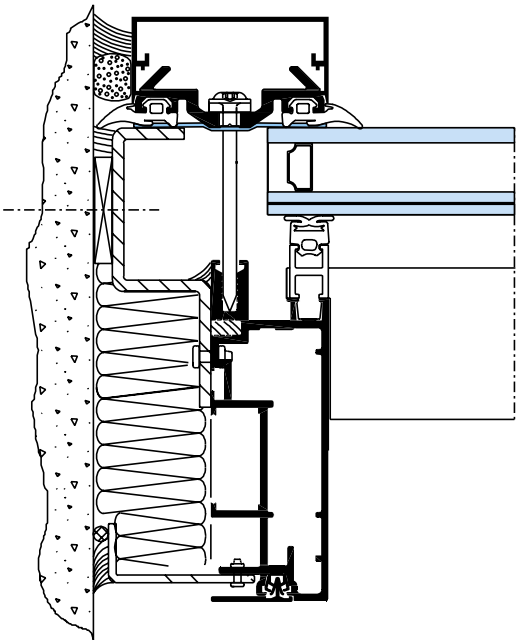
TECHNAL®

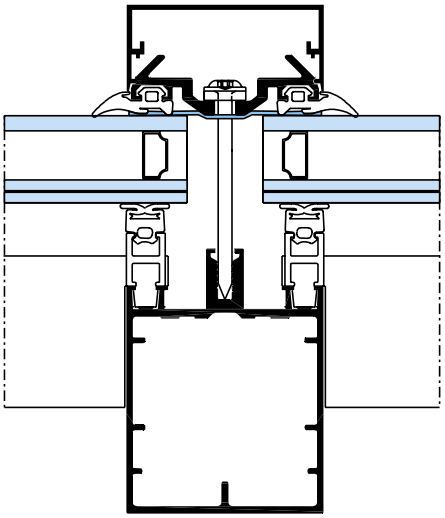
Installation examples

Rooflight

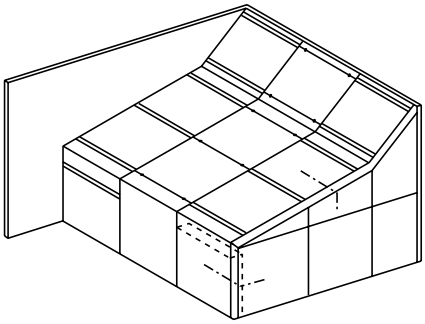


Horizontal cross section

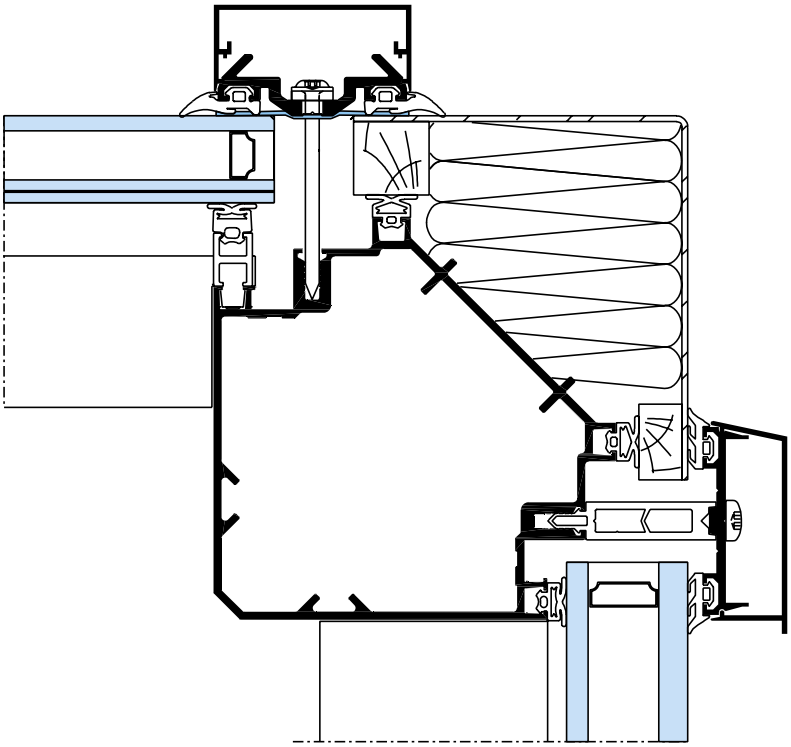


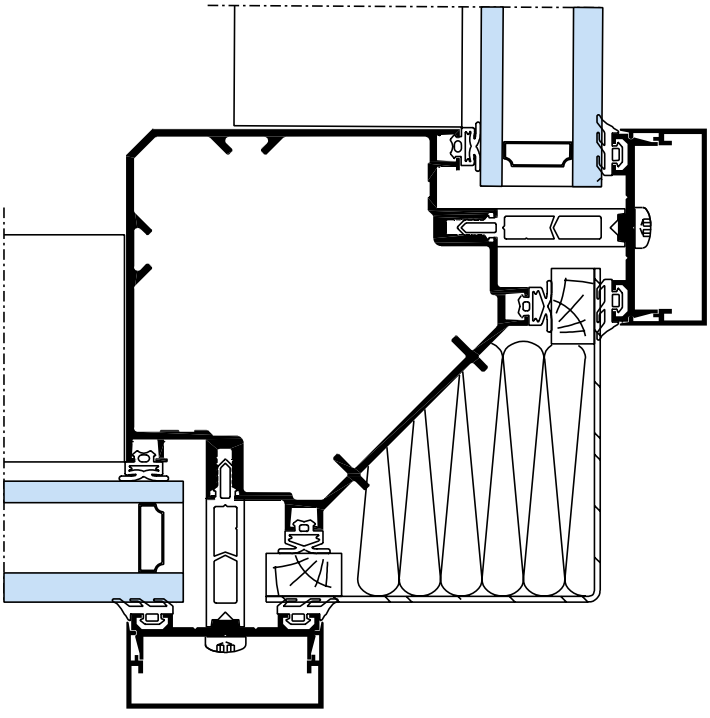


gevfc067



■ **Horizontal cross section**



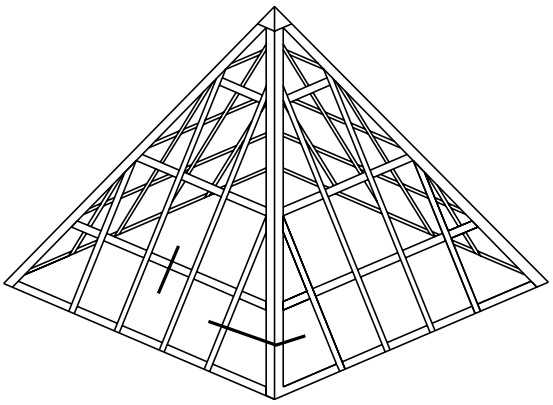


gevfc068

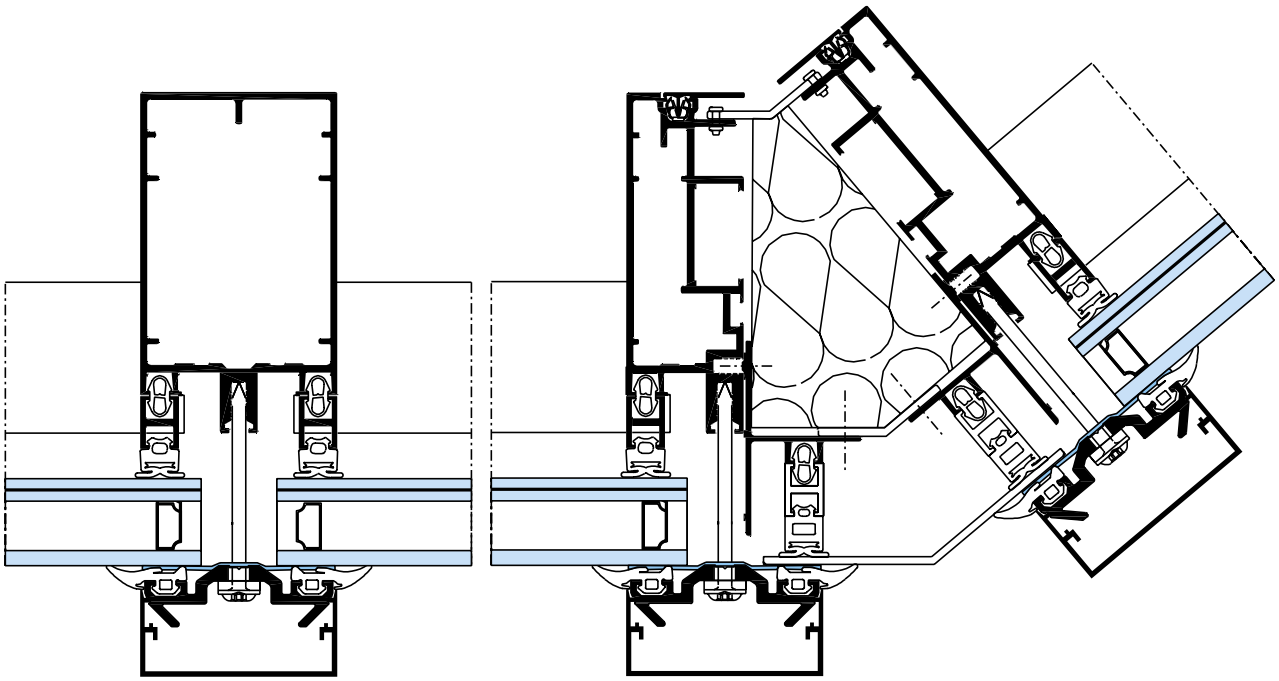
TECHNAL®

Installation examples

Pyramid



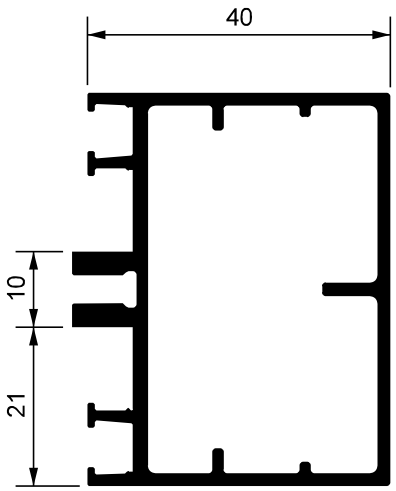
■ **Horizontal cross section**



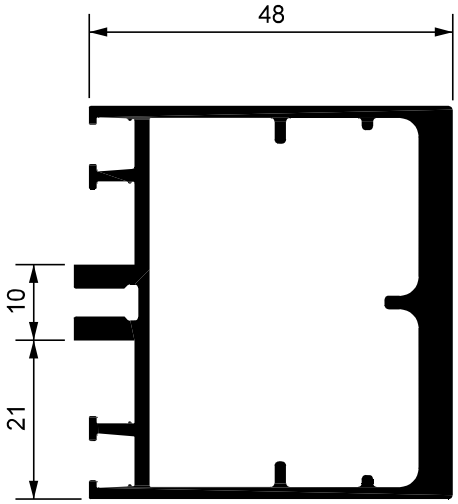
gevfc040

Profile summary

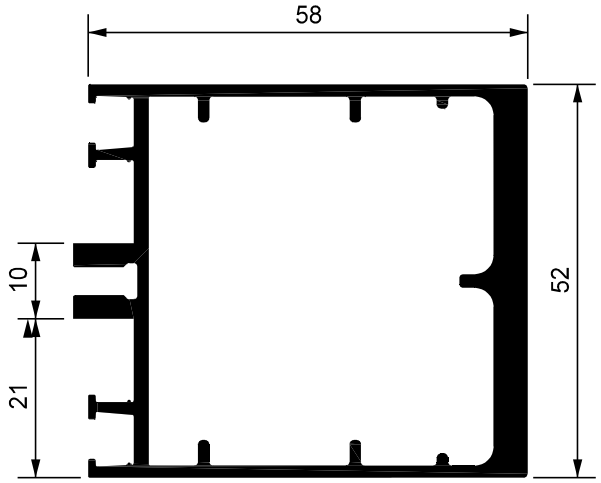
Transom profiles



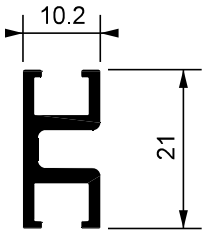
FM168



FM167



FM273



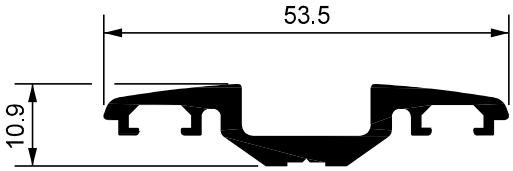
FM243

gevfc052

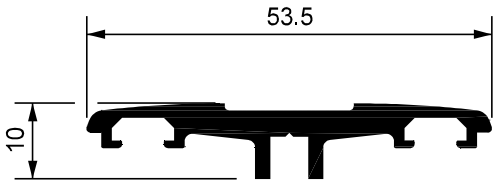
TECHNAL®

Profile summary

Cap pressure plate profiles

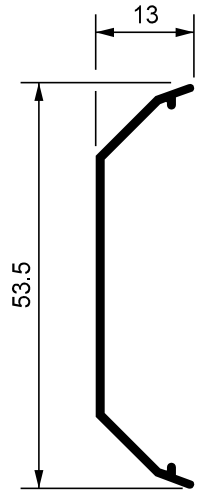


FM274 Mullion



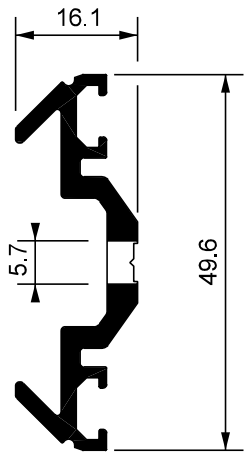
FM275 Transom

Cap profile

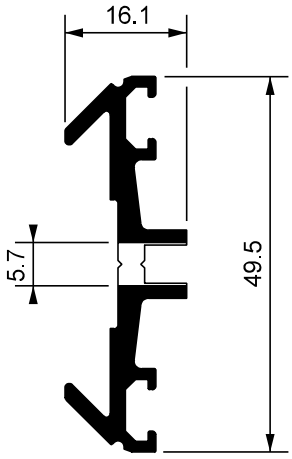


6665

Pressure plate profiles



FM276 Mullion
pre-drilled

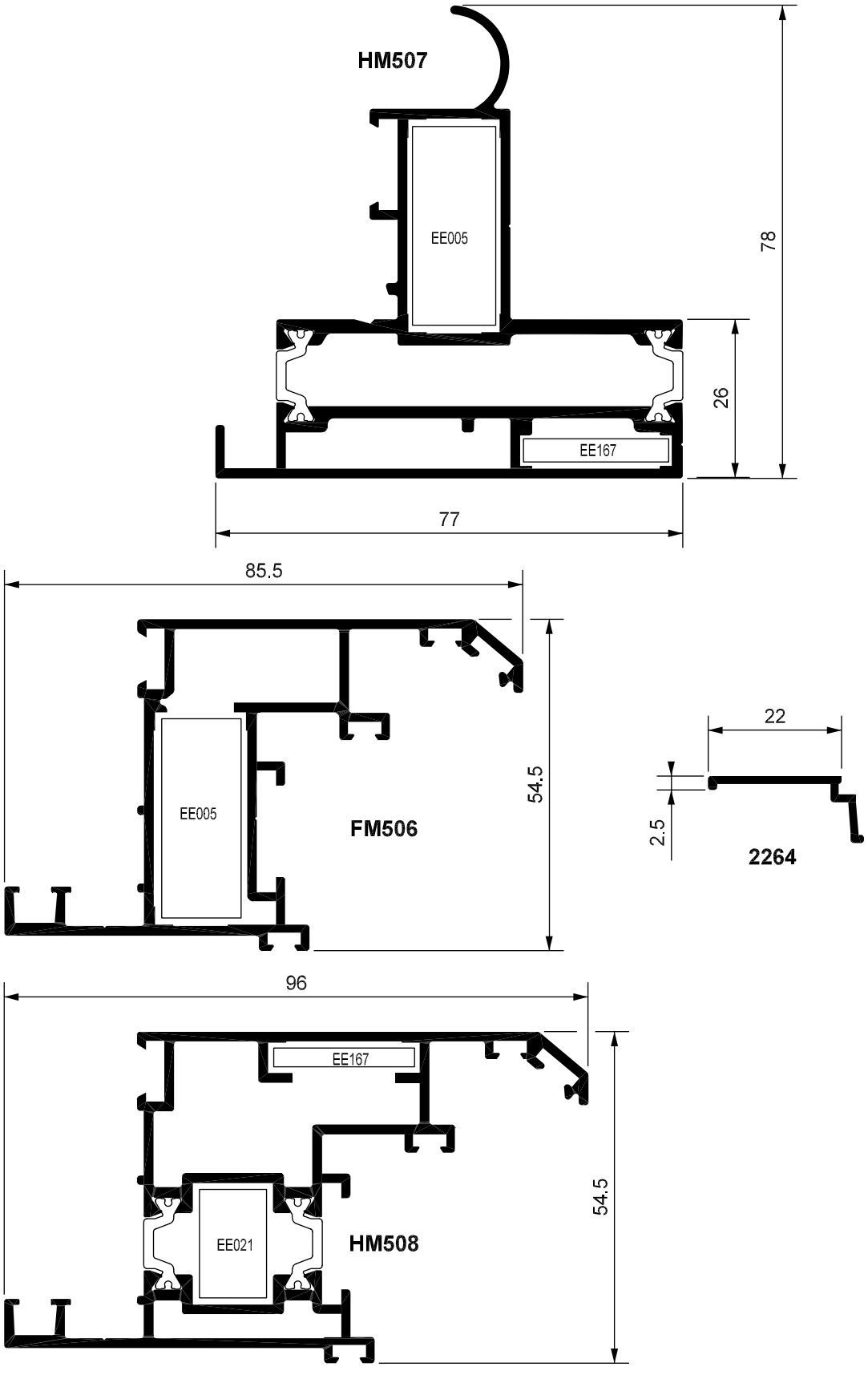


FM277 Transom
pre-drilled

gevfc053

Profile summary

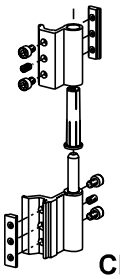
Rooflight profiles



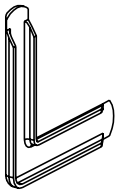
gevfc054

TECHNAL®

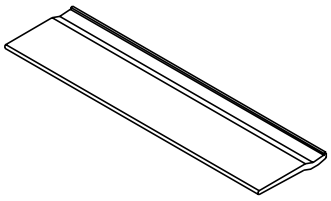
Accessory summary



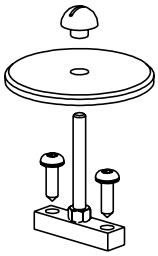
CF019 Standard hinge



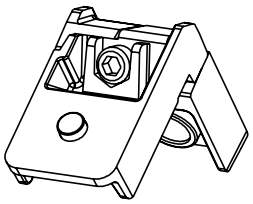
CF023 Rebate bracket



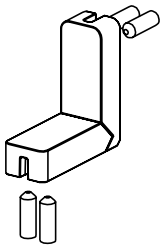
CM025 Skylight glass support



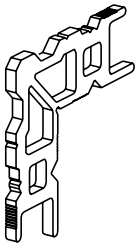
CM607 Horizontal pressure block for vertical line skylight



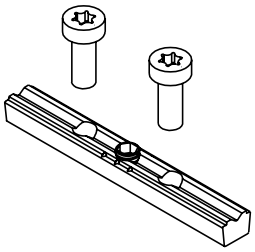
EE005 Self-locating corner cleat 15x35



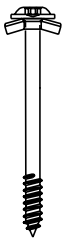
EE021 Self-locating corner clear 13.2x20



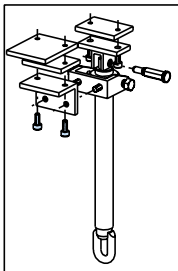
EE167 Crimp corner cleat 25x5



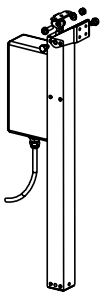
EM027 Skylight connector



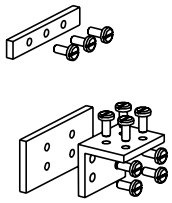
VE105 Weatherproof screw for skylight



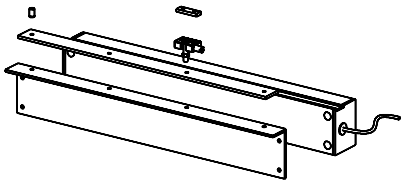
1905 Manual opening mechanism



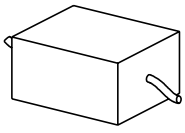
2105 Electric opening mechanism set



2106 Opening mechanism fixing set for 2105



2919 Electric chain opening mechanism



3229 Transformer for 2919

gevfc055

Weather gasket summary

JM031

Foam seal for skylight 6-11mm clearance

JM034

Butyl strip 50mm wide

JM114

External glazing gasket

1354

Weatherpile gasket for rooflight

2920

Rebate gasket for rooflight

6905

Glazing gasket 2mm

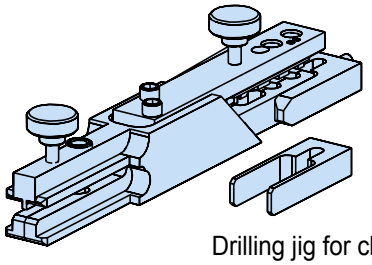
6906

Internal glazing gasket

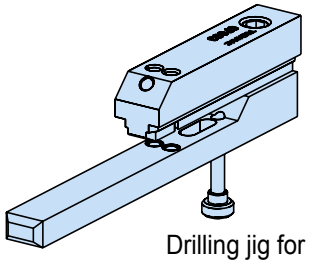
W113

Foam seal 15mm dia.

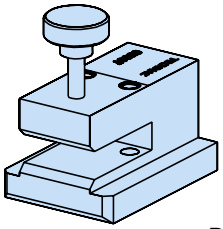
Tool summary



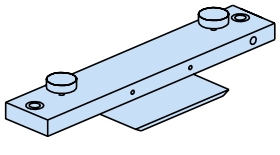
OF601 Drilling jig for cleat EE005



OP603 Drilling jig for cleat EE021



OM007 Drilling jig for mullionfixing hole



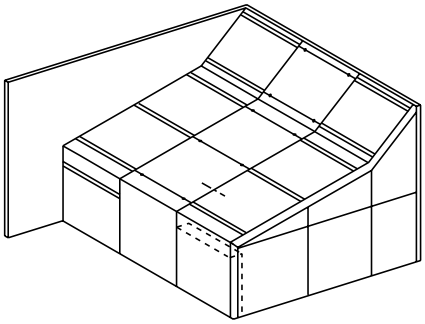
gevfc056 **OM615** Variable cleat drilling jig

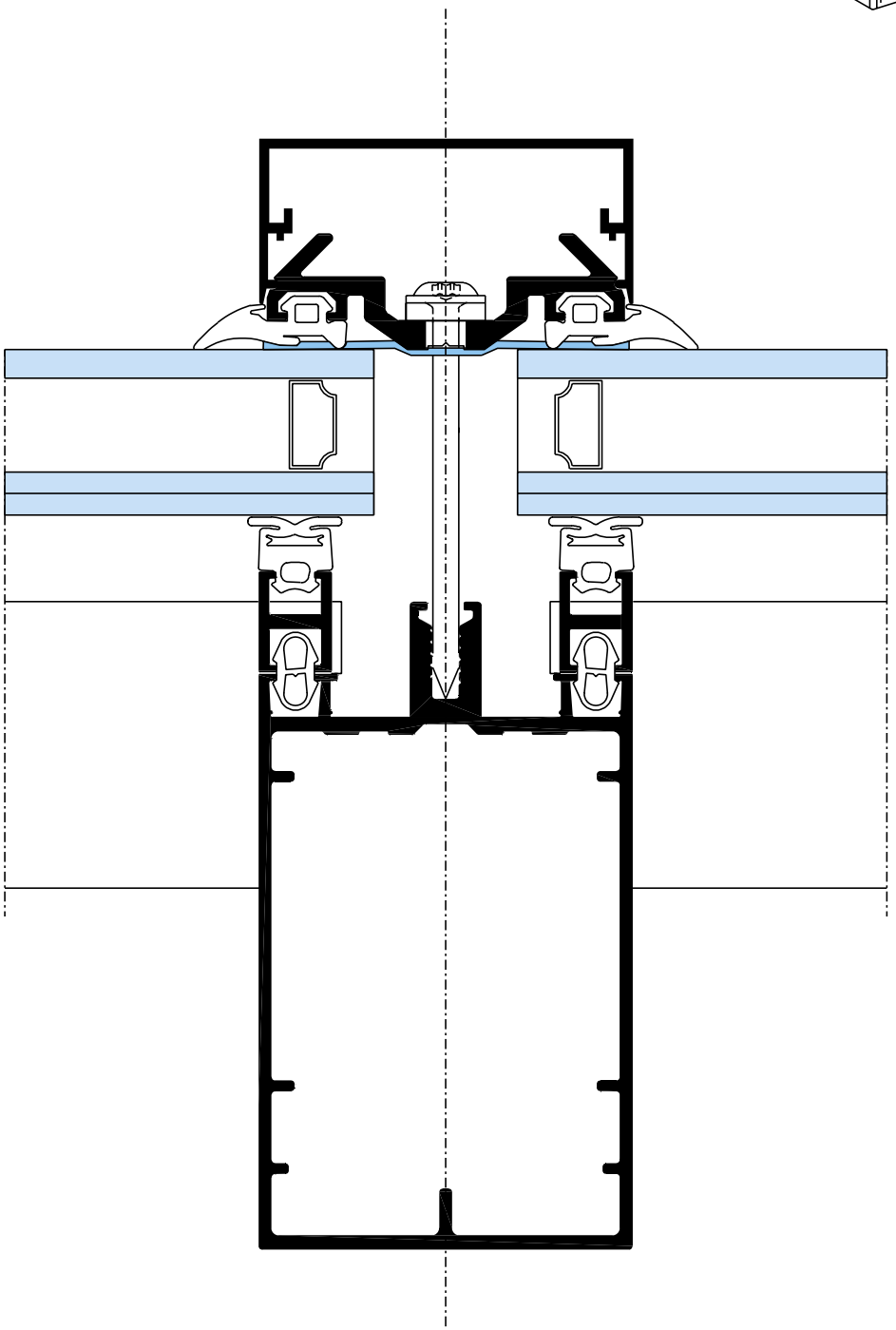
TECHNAL®

Node points (full-scale)

Grid effect fixed frame

■ **Horizontal cross section**

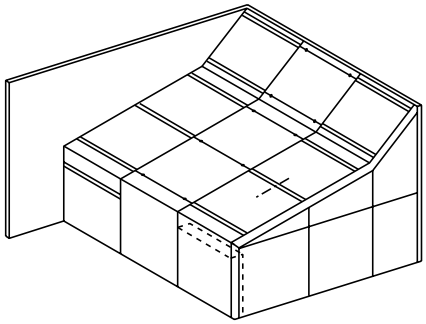


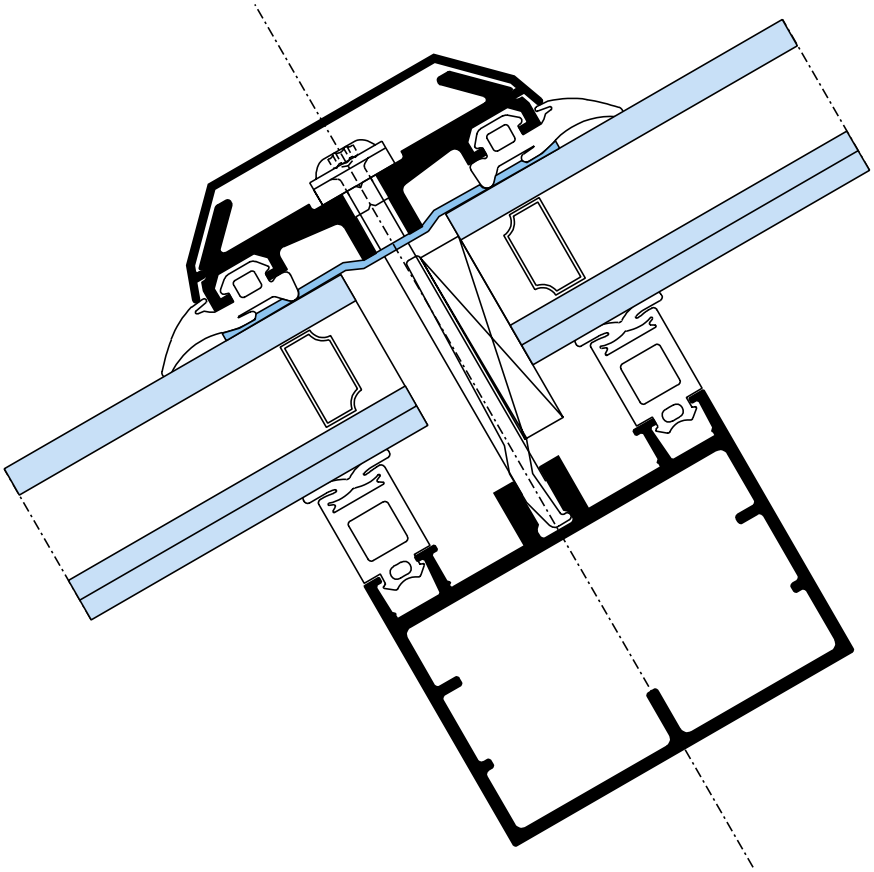


gevfc026

Scale 1/1

Vertical cross section





gevfc027

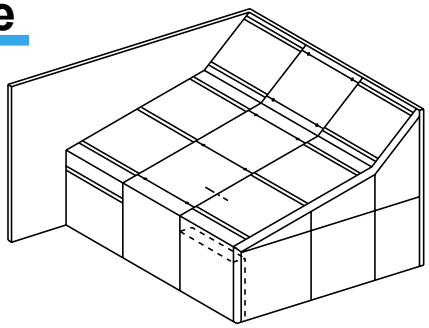
Scale 1/1

TECHNAL®

Node points (full-scale)

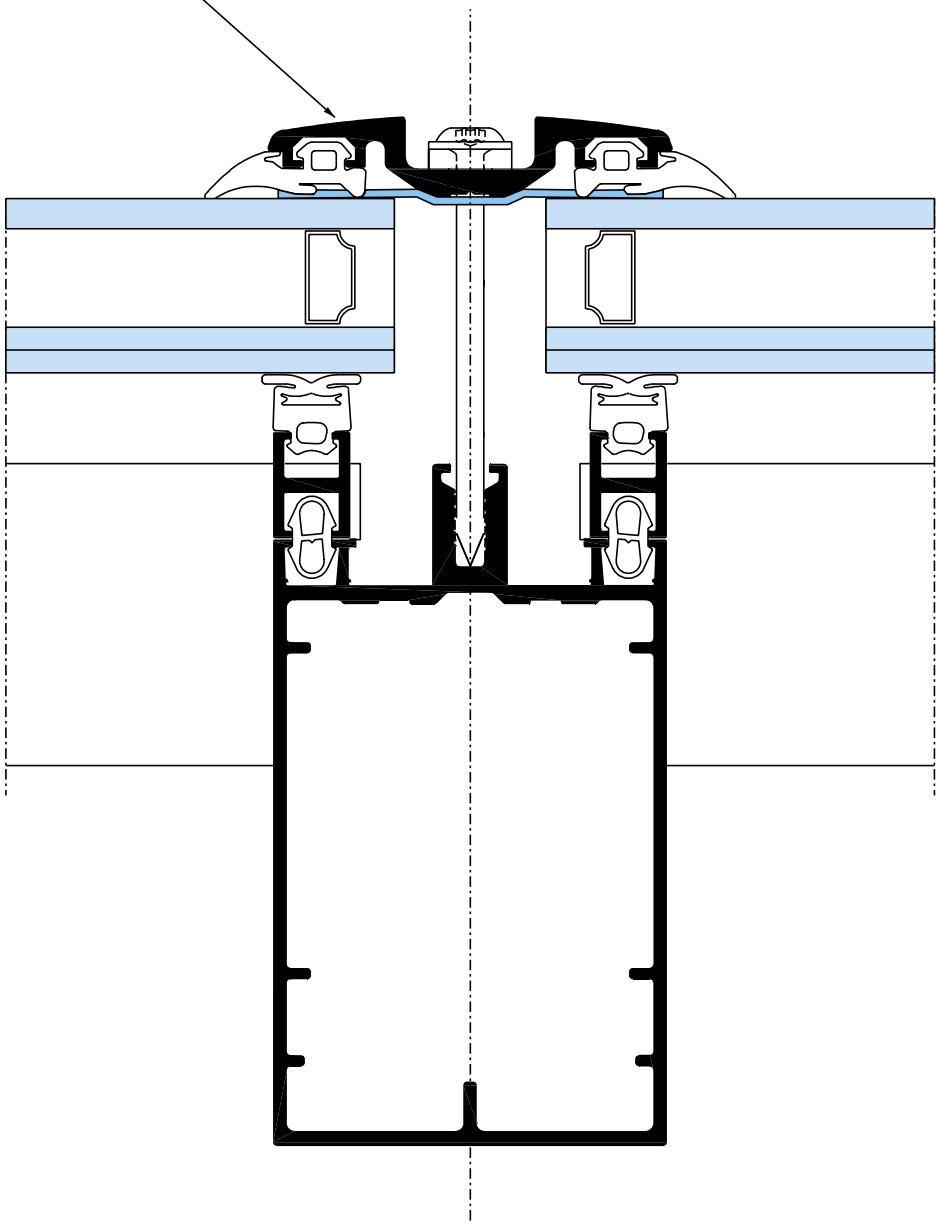
Grid effect fixed frame variant with glass roof capping pressure plate

■ **Horizontal cross section**



Variant with glass roof capping pressure plate

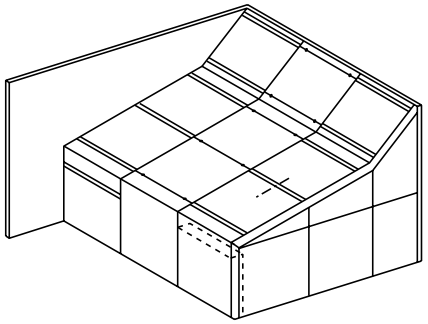
FM274

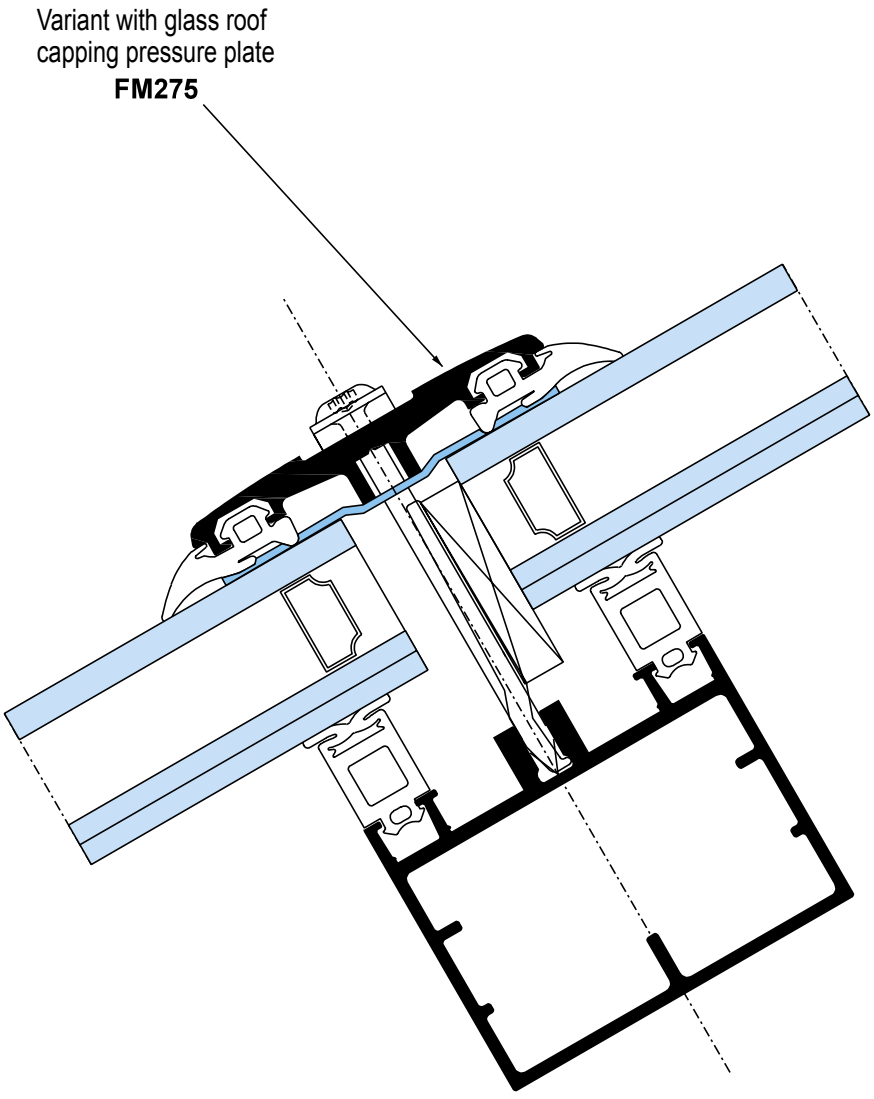


gevfc061

Scale 1/1

Vertical cross section





gevfc062

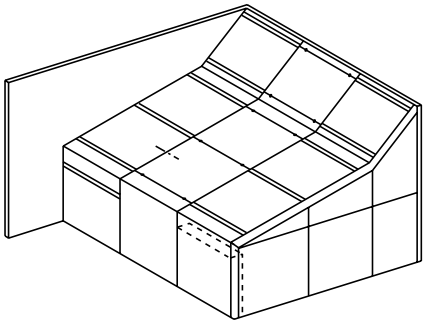
Scale 1/1

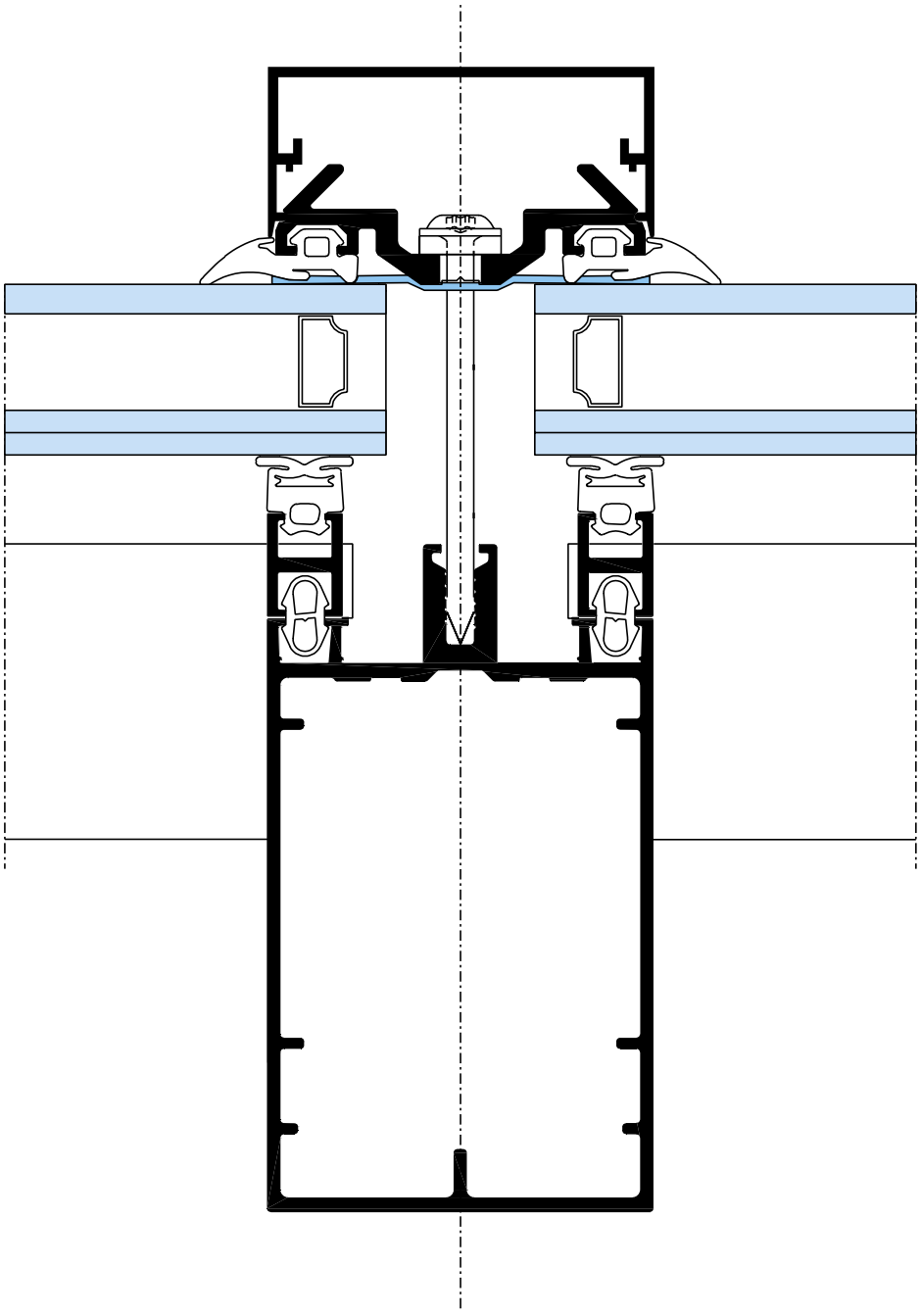
TECHNAL®

Node points (full-scale)

Vertical line effect fixed frame

■ **Horizontal cross section**

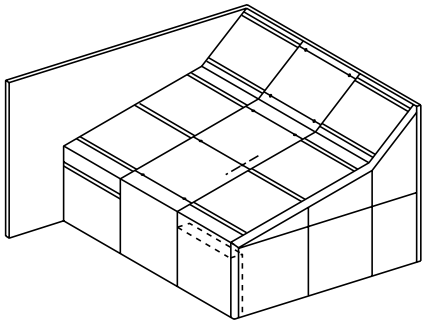


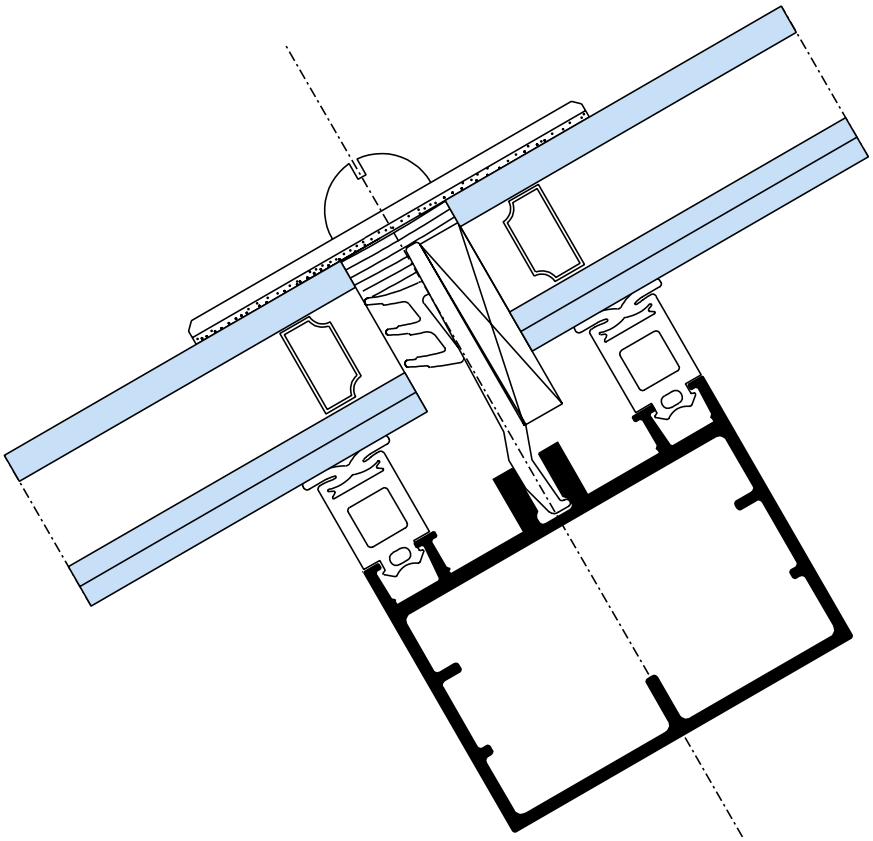


gevfc030

Scale 1/1

Vertical cross section





gevfc031

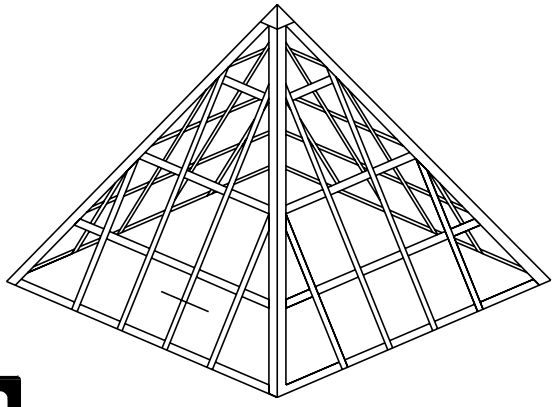
Scale 1/1

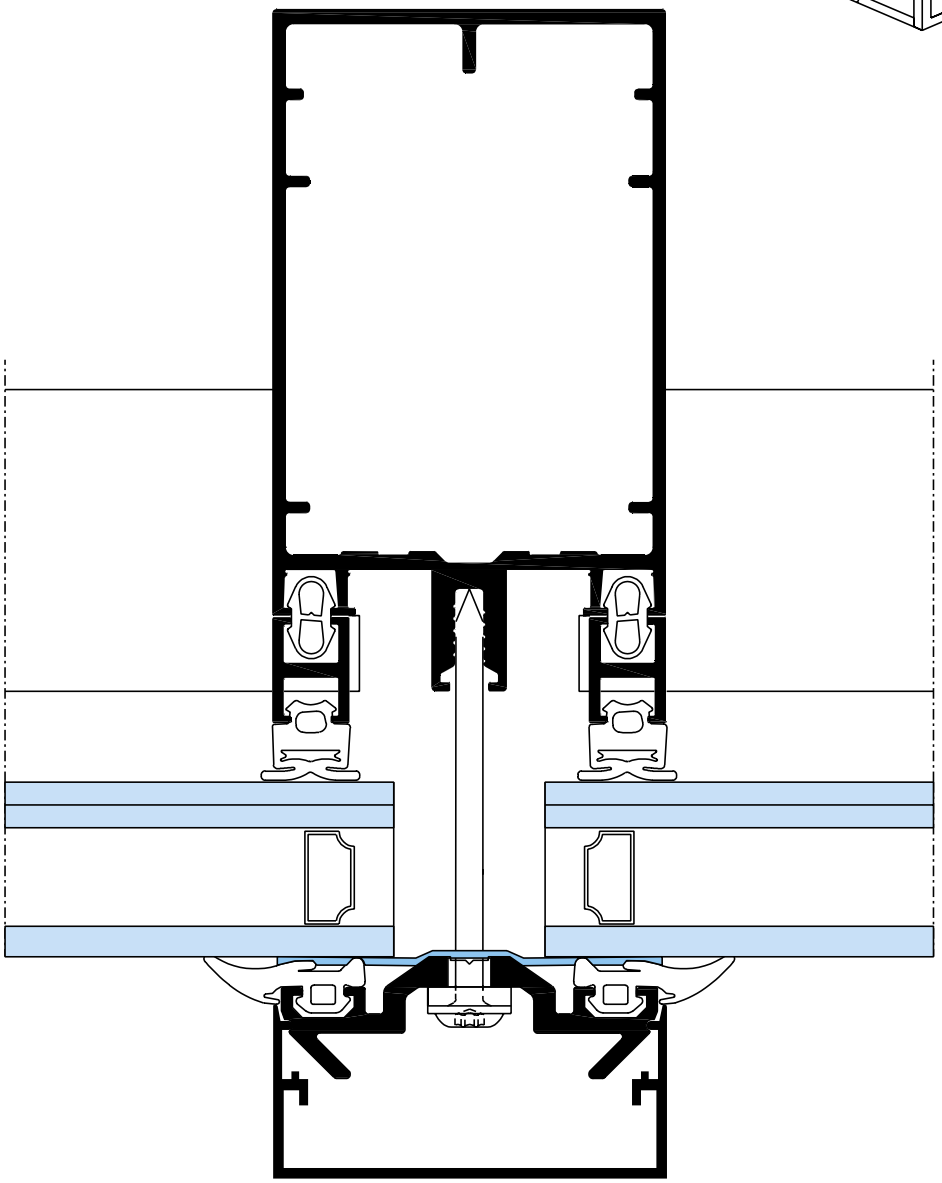
TECHNAL®

Node points (full-scale)

Pyramid

■ **Horizontal cross section**

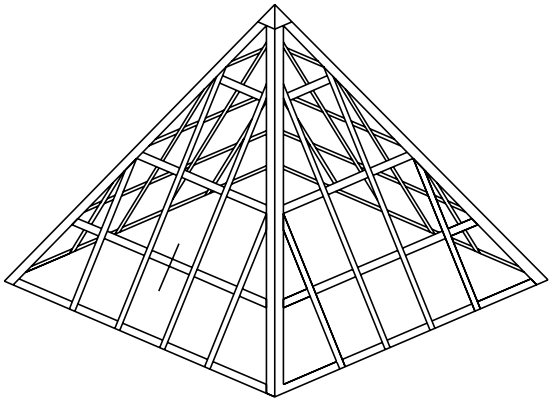


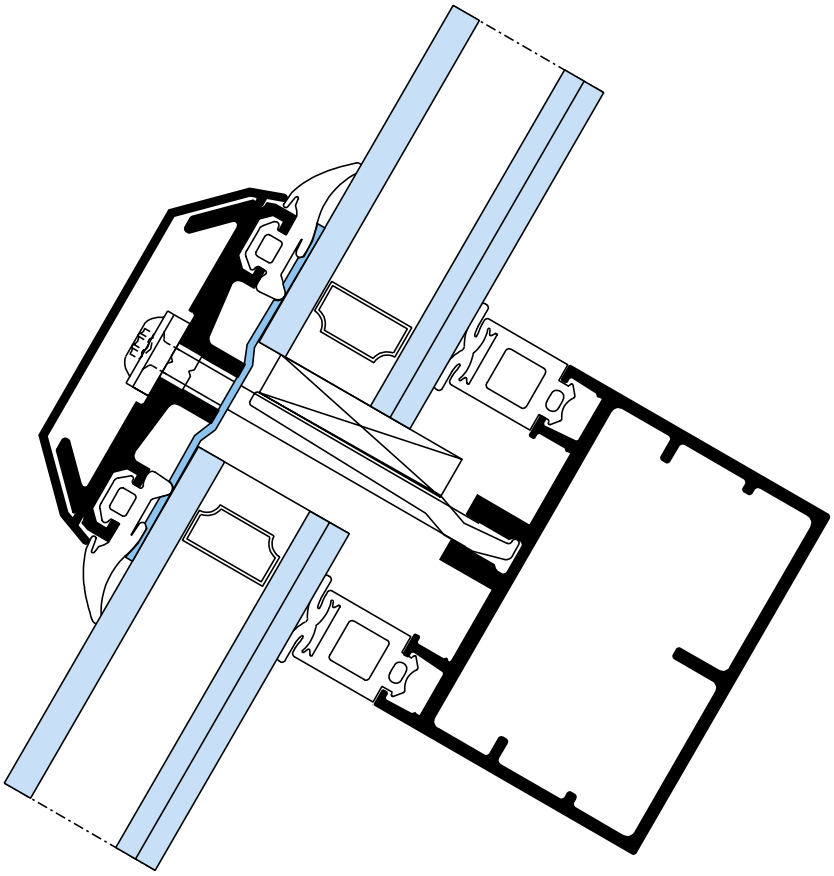


gevfc035

Scale 1/1

Vertical cross section





gevfc034

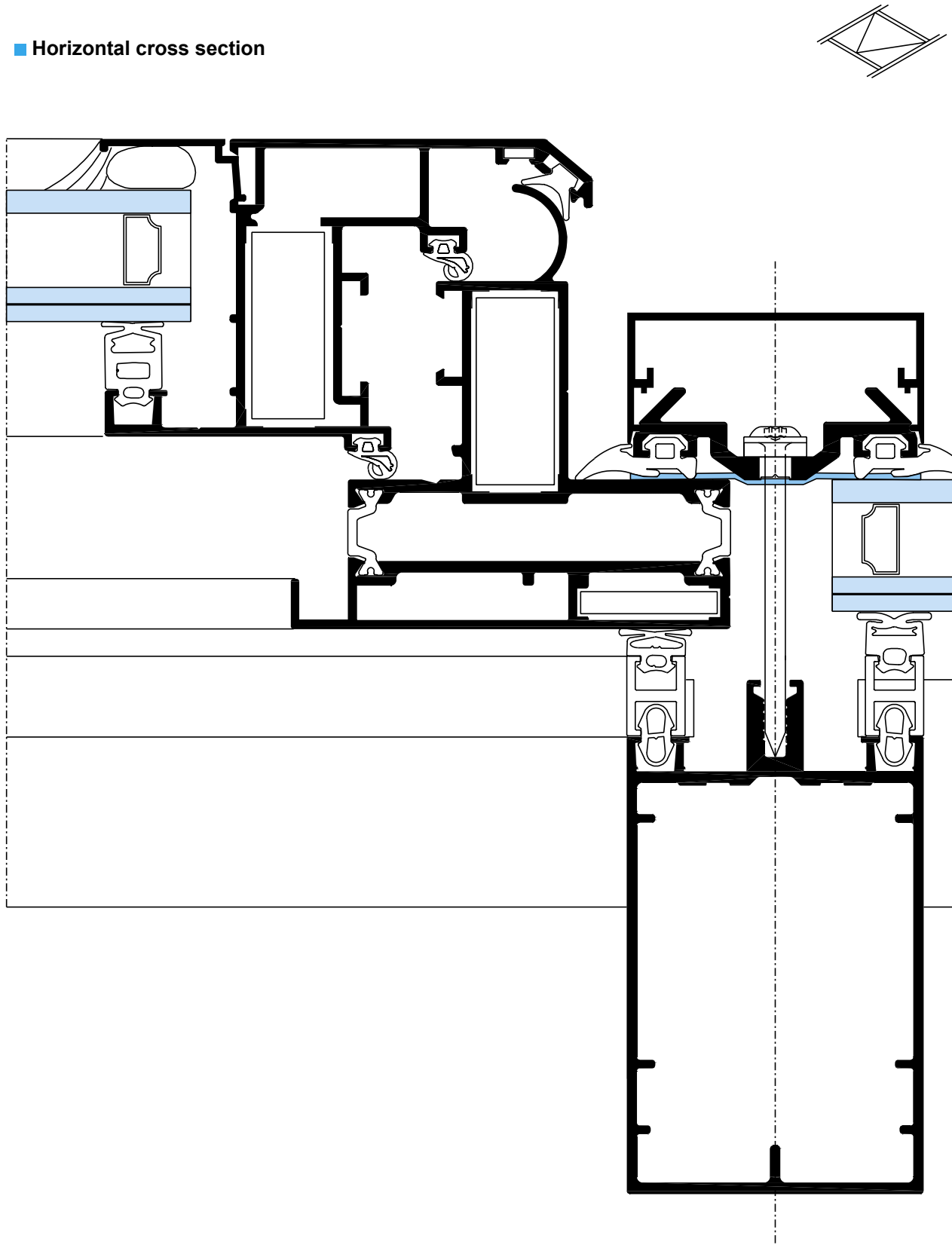
Scale 1/1

TECHNAL®

Node points (full-scale)

Rooflight with vent profile HM506

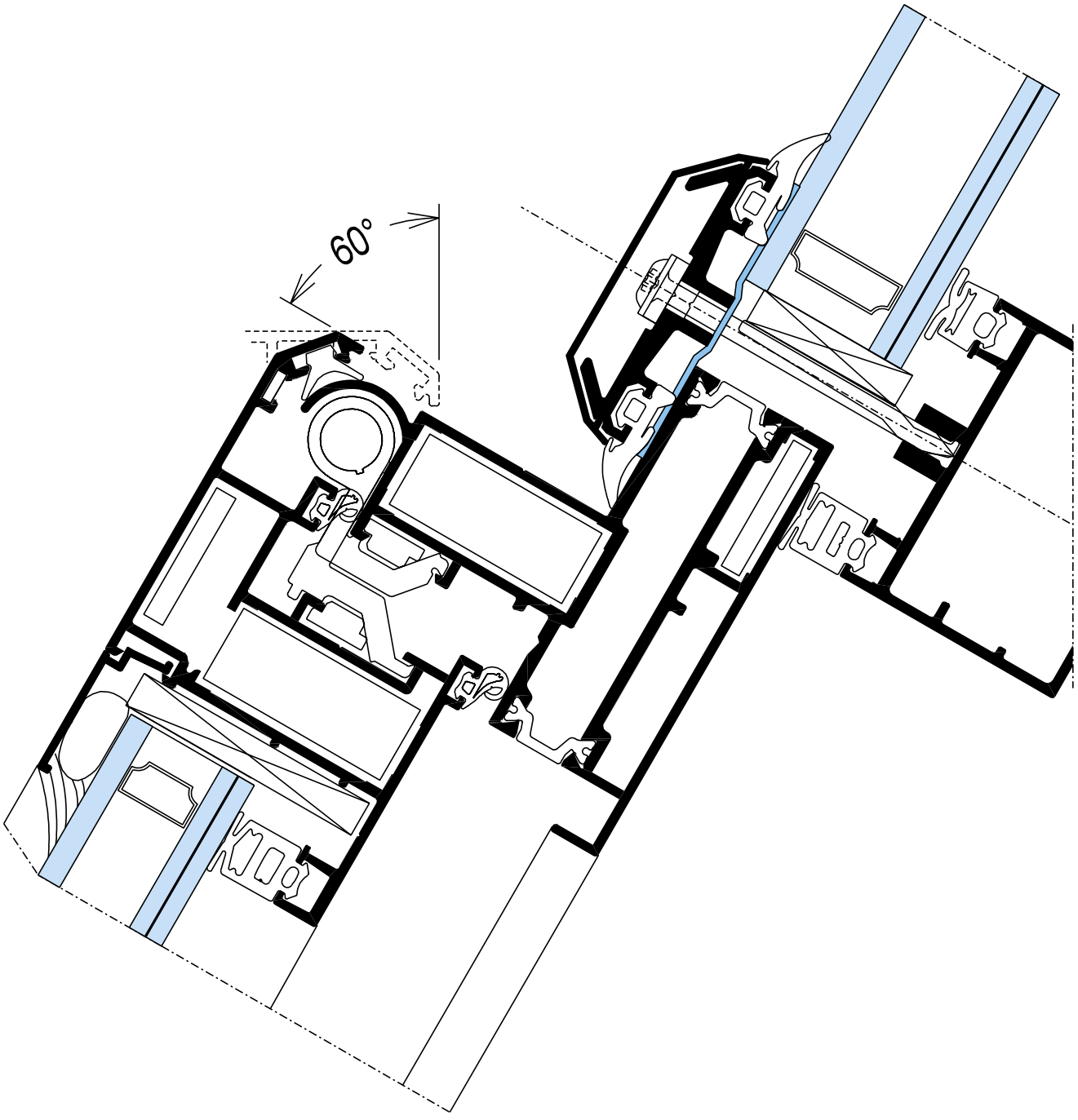
■ Horizontal cross section



gevfc041

Scale 1/1

Vertical cross section



gevfc042

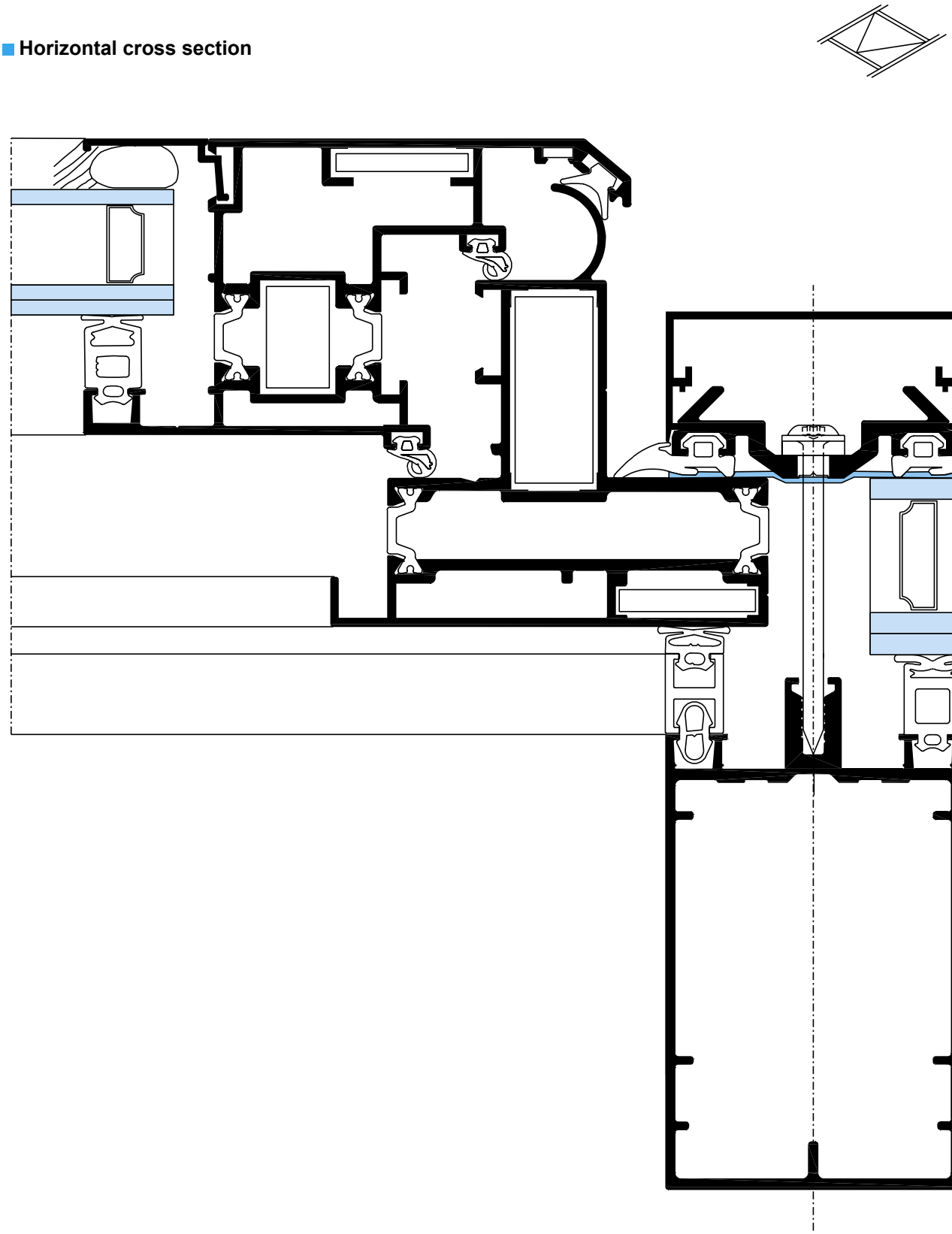
Scale 1/1

TECHNAL®

Node points (full-scale)

Rooflight with vent profile HM508 (thermal break)

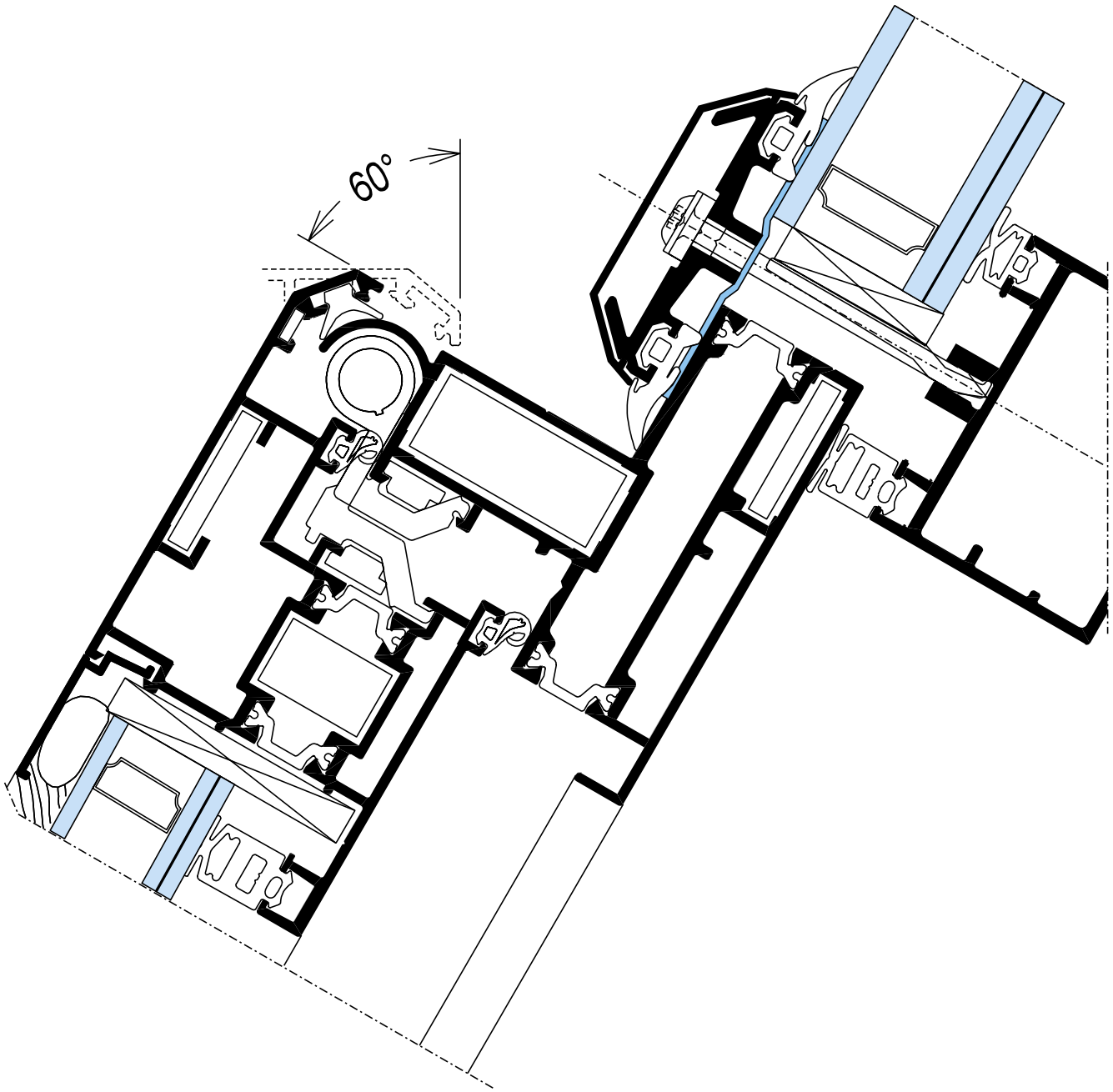
■ **Horizontal cross section**



gevfc045

Scale 1/1

Vertical cross section

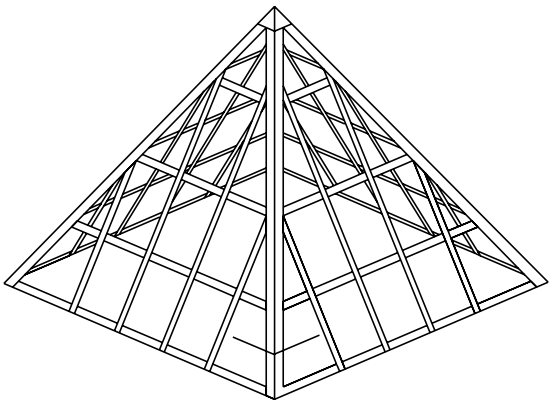


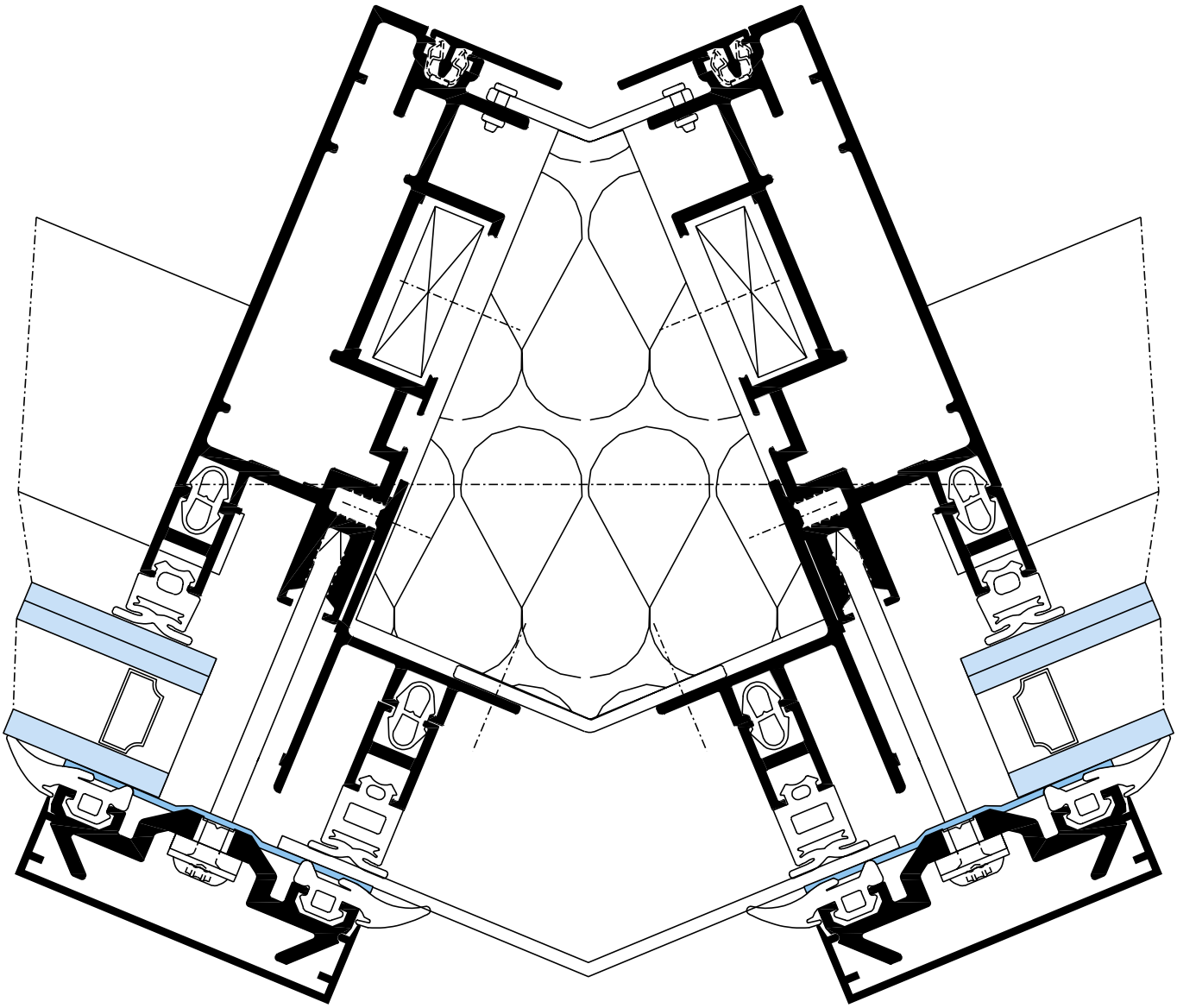
gevfc046

Scale 1/1

Node points (full-scale)

Hip on pyramid





gevfc038

Scale 1/1

Note - Note - Note - Note - Note - Note - Note - Note - Note - Note - Note - Note - Note - Note - Note -