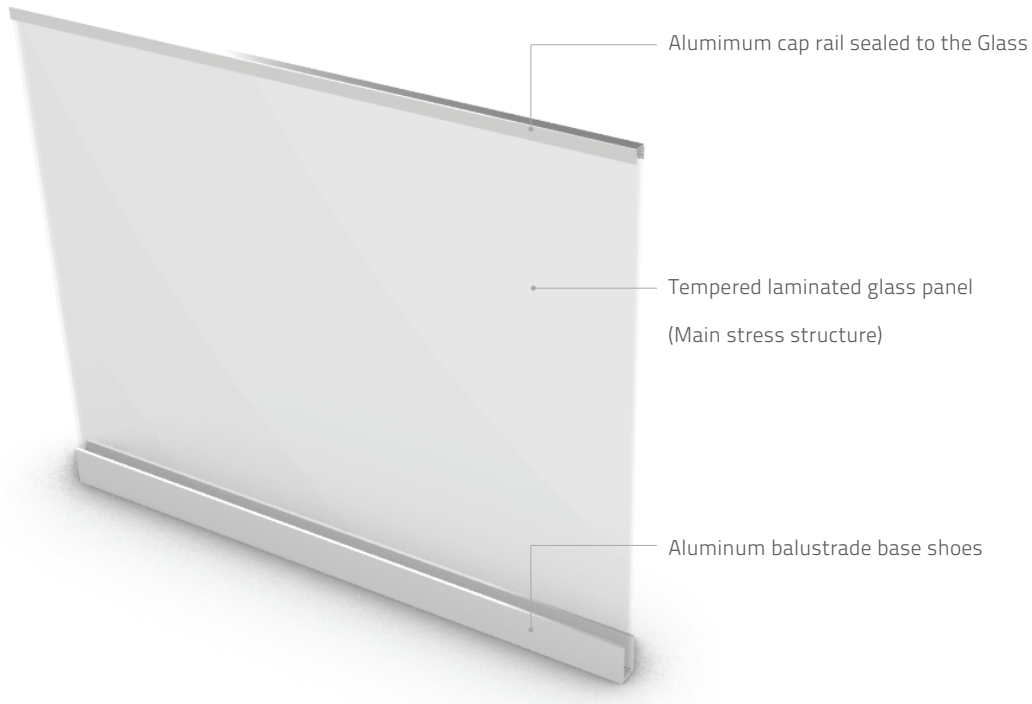


Glass balustrade system

TBK Metal® glass balustrade system copes with light use, heavy use and extremely heavy use situation.



TEMPERED GLASS

Tempered glass is an ideal choice for both residential and commercial settings where there is a possibility of increased traffic and human interaction. Because of its excellent impact and pressure resistance, this kind of glass is a great choice for balustrade, stair railings, glass entrances, storefronts, shower enclosures that need to be safe and strong.

Chemical composition by weight

SiO ₂	Na ₂ O	CaO	MgO and Trace elements
73%	14%	9%	4%

Mechanical properties(Standard:ASTM E 1300-16)

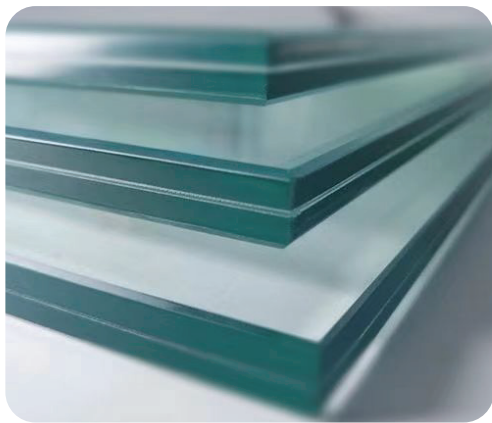
Thickness:	3 - 12mm
Size:	Customed, maximum size: 25mx43m
Color:	Clear, Ultra clear, Tinted, Coated
Modulus of Elasticity (Young's)	73.1GPa
Poisson's Ratio:	0.22
Allowable Edge Stress:	73MPa
Density:	2.56g/cm ³

Information about Tempered Glass:

Glass retains its original color, clarity, chemical makeup, and properties related to light transmission even after tempering. Tempering does not lessen the load-induced deflection of glass. Using thicker glass can help minimize glass deflection. Compared to annealed or heat-strengthened glass, tempered glass is less likely to break into tiny pieces and injure someone. Tempered glass is approximately four times stronger than annealed glass of the same thickness and configuration. Higher thermal stability, it can withstand temperature difference of more than 250 degrees.

LAMINATED TEMPERED GLASS

A thin layer of plastic is layered between two or more sheets of glass to create tempered laminated glass. By strengthening the link between the layers, this procedure helps to keep glass from breaking or shattering under pressure. Tempered laminated glass is a safe choice for balustrade, stair railings in addition to being strong. The plastic coating lessens the chance of damage in the event that the glass breaks by preventing the shards from flying apart.



Typically, the interlayer is made of thermoplastic polyurethane (TPU), cast in place (CIP) liquid resin, ionoplast polymers, polyvinyl butyral (PVB), or ethylene-vinyl acetate (EVA). An further benefit of laminated glass for windows is that almost all UV radiation can be blocked with a sufficient TPU, PVB, or EVA interlayer. For example, a thermoset EVA may shield up to 99.9% of UV radiation. Thermoset EVA provides full bonding (cross-linking) with materials such as polycarbonate (PC), glass, and other items. If EVA or TPU is used for sound insulation, no additional acoustic material is needed; A unique acoustic PVB compound is used while employing PVB. Glass balustrade laminated interlayer is usually PVB with 1.52mm thickness.

ALUMINUM BASE SHOES

Aluminum balustrade base shoe is significantly lighter, stronger and safe, which is widely utilized in domestic and public areas such as shopping malls, stadiums and airports.

MATERIAL GRADE

TBK Metal® aluminum balustrade base shoe is made of high-quality grade 6063-T5, 6063-T6. (Standard: ASTM-B209, EN-AW: 6063)

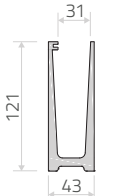
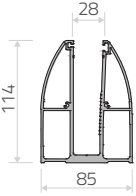
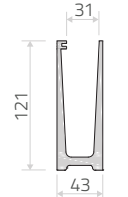
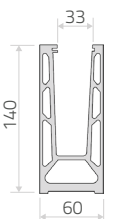
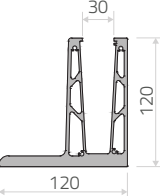
Chemical composition by weight%(BS EN 573-3:2007)

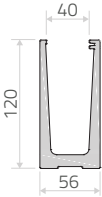
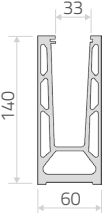
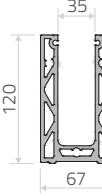
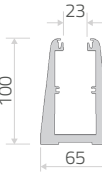
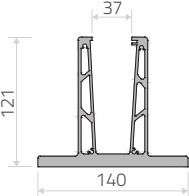
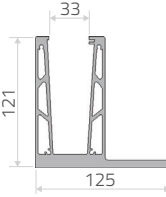
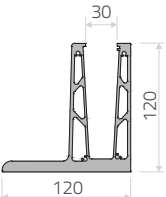
Grade	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Al
6063	0.2-0.6	0.35	0.10	0.10	0.45-0.90	0.10	0.10	0.10	remainder

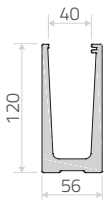
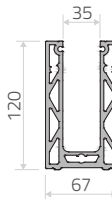
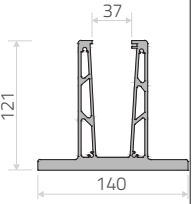
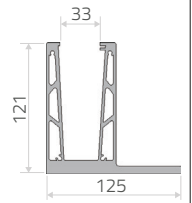
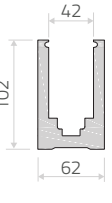
Extruded Profile Mechanical properties(Standard:BS EN 755-2:2013)

Temper	Wall thickness(mm)	Rm(MPa)	R _{p0.2} (MPa)	A(%)	A ₅₀ (%)	Hardness(Typical value HBW)
T5	10-25	190	150	6	5	75
T6	10-25	220	180	4	4	80

SURFACE OR EMBEDDED MOUNTED PROFILE

TBK Base shoes (mm)	Weight per meter (kg/m)	Balustrade glass panel thickness(mm)	Use of buidings or part of building	Grade
	4.817	12-14	Cope with line loads in excess of 0.36kN/m. 1A: Single family dwelling (house, maisonette, etc)-Stairs, landings, ramps and edges of internal floors.	6063-T5
	4.418			6063-T5
	4.817	16-18	Cope with line loads in excess of 0.74kN/m. 1B: Boarding house, guest house, hostel, loding house, residential club (and communal areas in residential property). 1C: Hotel and motel. 2: Those parts of a prison, hospital, school, college or other training establishment or detention centre, not used for assembly purposes. 3C: Museum, library, non-residential club, pedestrian area. 4: Office 1A: Single family dwelling (house, maisonette, etc)-external balconies, edges of roofs, footways and pavements.	6063-T5
	7.275			6063-T6
	7.294			6063-T5

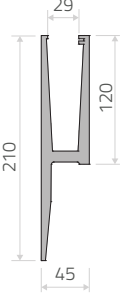
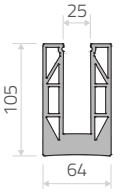
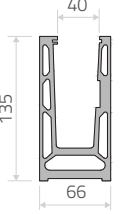
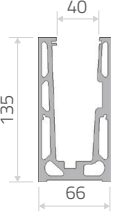
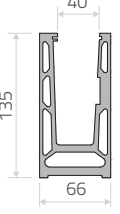
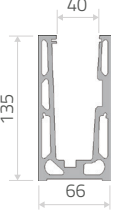
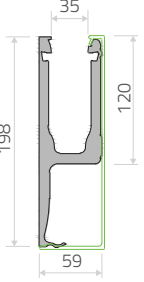
TBK Base shoes (mm)	Weight per meter (kg/m)	Balustrade glass panel thickness(mm)	Use of buidings or part of building	Grade
	6.451	20-23	Cope with line loads in excess of 1.5kN/m. 5: Shop, department stor, supermarket, public house, restaurant with or without assembly area, cafe, hairdressers, wholesale or retail warehouse, public area of bank, building society ort betting shop.	6063-T5
	7.275			6063-T6
	6.876			6063-T5
	5.808			6063-T5
	7.949			6063-T5
	6.969			6063-T5
	7.294			6063-T5

TBK Base shoes (mm)	Weight per meter (kg/m)	Balustrade glass panel thickness(mm)	Use of buidings or part of building	Grade
	6.451	24-30	Cope with line loads in excess of 3kN/m. 3A:Designated and non-designated sports grounds. 3B:Theatre, cinema, concert hall, discotheque, auditorium, shopping mall.	6063-T6
	6.876			6063-T6
	7.949			6063-T6
	6.969			6063-T6
	7.629			6063-T6

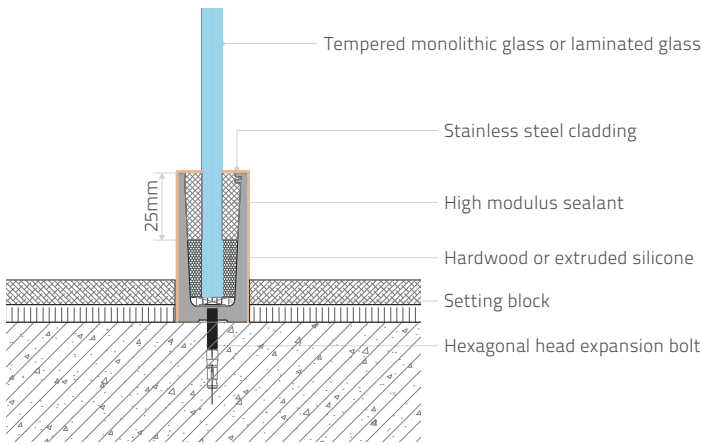
Note: The glass thickness and use of building is calculated based on that the main stress structure is the glass.

Please feel free to contact us for more detailed calculation..

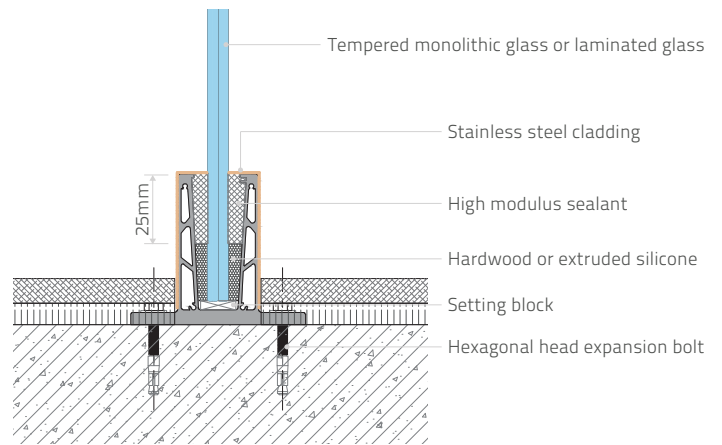
FASCIA MOUNTED PROFILE

TBK Base shoes (mm)	Weight per meter (kg/m)	Balustrade glass panel thickness(mm)	Use of buidings or part of building	Grade
	7.784	12-14	Cope with line loads in excess of 0.36kN/m. 1A: Single family dwelling (house, maisonette, etc)-Stairs, landings, ramps and edges of internal floors.	6063-T5
		16-18	Cope with line loads in excess of 0.74kN/m. 1B: Boarding house, guest house, hostel, loding house, residential club (and communal areas in residential property). 1C: Hotel and motel. 2: Those parts of a prison, hospital, school, college or other training establishment or detention centre, not used for assembly purposes. 3C: Museum, library, non-residential club, pedestrian area. 4: Office 1A: Single family dwelling (house, maisonette, etc)-external balconies, edges of roofs, footways and pavements.	6063-T5
	7.964			
	7.712	20-23	Cope with line loads in excess of 1.5kN/m. 5: Shop, department stor, supermarket, public house, restaurant with or without assembly area, cafe, hairdressers, wholesale or retail warehouse, public area of bank, building society ort betting shop.	6063-T5
	7.157			6063-T5
	7.712	24-30	Cope with line loads in excess of 3kN/m. 3A: Designated and non-designated sports grounds. 3B: Theatre, cinema, concert hall, discotheque, auditorium, shopping mall.	6063-T5
	7.157			6063-T5
	9.24			6063-T6

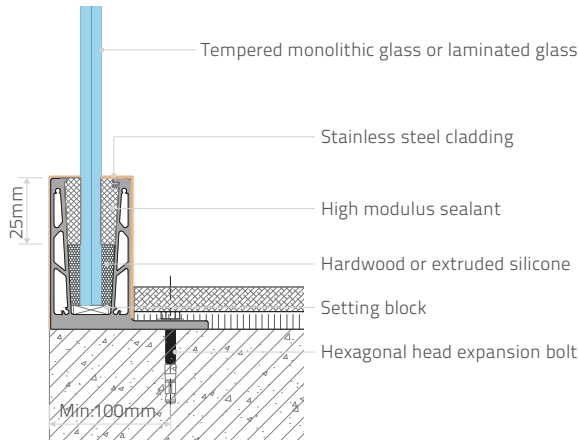
INSTALLATION



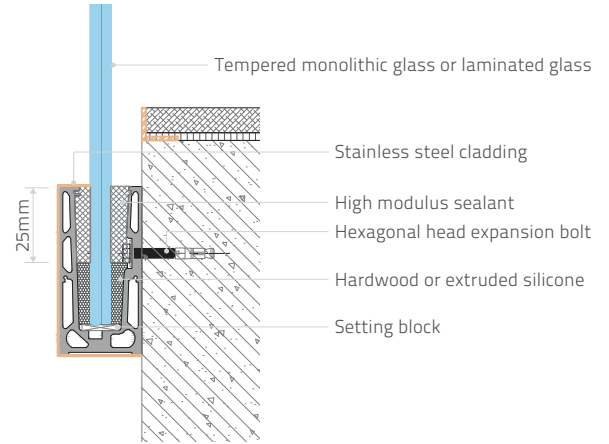
Surface mounted base shoe



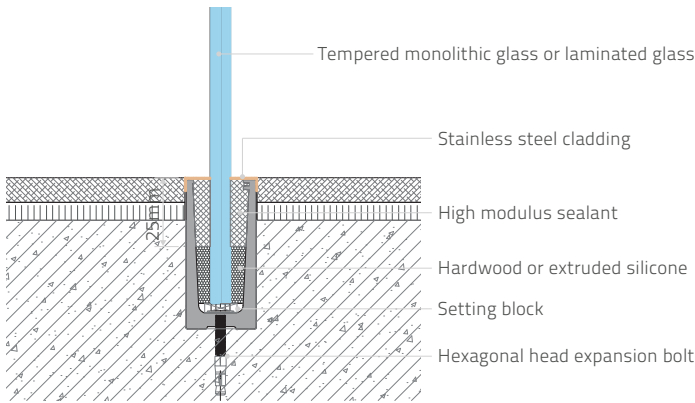
Surface mounted base shoe



Surface mounted base shoe

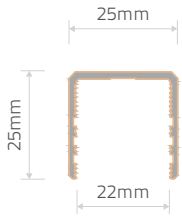


Fascia mounted base shoe

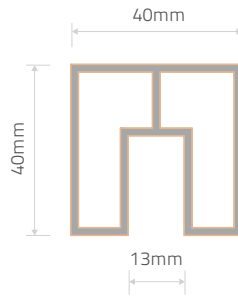


Embedded mounted base shoe

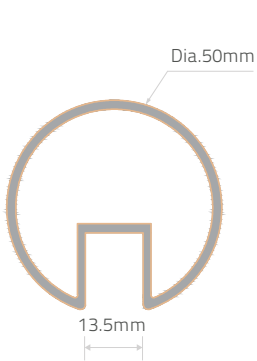
ALUMINUM CAP RAIL



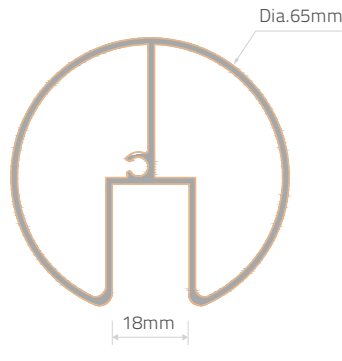
0.287 kg/m



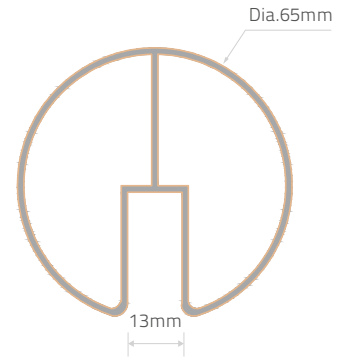
1.036 kg/m



1.006 kg/m



1.188 kg/m



1.036 kg/m

MAINTENANCE

Aluminum base shoes and cap rail:

Aluminum production that haven't been assembled yet need to be kept in dry, ventilated spaces. Kindly ensure that the exterior packing of any aluminum profiles that need to be put outside is completely removed. Products should be separated and their packaging removed right away if they are exposed to rain or snow so they can dry fully.

Customers should exercise caution when the aluminum profiles' surfaces come into contact with walls during installation. To prevent contact sections from becoming contaminated by strong acids and bases, such as lime, cement, and mortar, anticorrosive treatment must be used. If there is surface corrosion on metal profiles, high granularity and readily degradable sheets or wrappings shouldn't be utilized for packaging or strapping. Using a gentle cloth, wipe off the aluminum extrusion profiles. It is preferable to use tap water or 5% neutral soapy water. Avoid using steel wool for scrubbing and highly corrosive solvents like xylene or acetone for rinsing.

Stainless steel cladding:

Washing with soap or a mild detergent and water, followed by a clear water rinse, is usually quite adequate for domestic and architectural product. An enhanced aesthetic appearance will be achieved if the cleaned surface is wiped dry.

Glass

To start, completely soak the glass surface in a mix of clean water and soap to remove any dirt or debris. Wipe the cleaning solution on the glass using light to medium pressure and a circular motion. Make sure to completely rinse the glass with plenty of clean water after washing it right away. To dry the glass surface, use a squeegee or a clean, lint-free towel.

Avoid using abrasive or strong cleaning agents or solutions. Steer clear of metal blades and scrapers.