POSIGLAZE PG120/180 BALUSTRADE SYSTEM

Design Tables

Base Fix PG120B

SAFELITE® toughened laminated safety glass and TEMPAFLOAT® monolithic toughened safety glass. Steel and concrete only. Not suitable for timber.

Glass Thickness t (mm)	Occupancy	Maximum Design Height H (mm)	Channel Fixing Spacing (mm) Max	Design loads to deck structure			
				M* (kNm/m)	T* (kN)	SLS Wind (kPa)	ULS Wind (kPa)
12, 13.52,15.2, 15, 17.52 & 17.2	A	1150	400	1.04	12.94	-	-
	C3/B/E	1000 1100 1150	400 400 400	1.13 1.24 1.29	14.06 15.47 16.17	1.51 1.37 1.31	2.25 2.05 1.96
19.2	C3/B/E	1220	200	1.37	8.58	1.24	1.84
15, 17.52	C3/B/E	1250	200	1.41	8.79	1.21	1.80
21.52	C1/C2/D	1250	200	2.81	17.58	2.41	3.60

Side Fix PG120S & PG180S

SAFELITE® toughened laminated safety glass and TEMPAFLOAT® monolithic toughened safety glass. Steel, concrete and timber.

Glass Thickness t (mm)	Occupancy	Maximum Design Height H (mm)	Channel Fixing Spacing (mm) Max	Design loads to deck structure			
				M* (kNm/m)	T* (kN)	SLS Wind (kPa)	ULS Wind (kPa)
12, 13.52,15.2, 15, 17.52 & 17.2	A	1030	400	0.93	8.48	-	-
	C3/B/E	1030 (concrete/steel) 1030 (timber)	400 200	1.33 1.33	13.33 6.67	1.68 1.68	2.50 2.50
19.2	C3/B/E	1100[1]	200	1.41	6.96	1.56	2.32
17.52	C3/B/E	1130 (concrete/steel)	200	1.44	7.09	1.51	2.26
21.52	C1/C2/D	1130 (concrete/steel)	200	2.88	14.18	3.02	4.51

Note: 1) Maximum design height (H) for fixing to timber is 1050mm.
2) Balustrades for C1, C2 & D Occupancy are not suitable for fixing to timber.

Base Fix Free Standing Pool Fences

(Not protecting a fall of 1.0m or more). Steel and concrete only. Not suitable for timber.

Glass Thickness t (mm)	NZS3604 Wind Zone	Substrate	Maximum Design Height H (mm)	Channel Fixing Spacing (mm) Max	Design loads to deck structure	
					M* (kNm/m)	T* (kN)
12	Up to High	Concrete, Steel	1220	400	0.86	10.75
15	Very High	Concrete, Steel	1220	200	1.11	6.94
17.52	Extra High	Concrete, Steel	1220	200	1.34	8.38

Side Fix Free Standing Pool Fences

(Not protecting a fall of 1.0m or more). Steel, Concrete and Timber.

Glass Thickness t (mm)	NZS3604 Wind Zone	Substrate	Maximum Design Height H (mm)	Channel Fixing Spacing (mm) Max	Design loads to deck structure	
					M* (kNm/m)	T* (kN)
12	Up to High	Concrete, Steel, Timber	1220	400	1.01	9.75
15	Very High	Concrete, Steel, Timber	1220	200	1.30	6.27
17.52	Extra High	Concrete, Steel	1220	200	1.57	7.58

POSIGLAZE PG120/180 BALUSTRADE SYSTEM

Design Tables

Glass thickness key:

Glass Thickness t (mm)	Inner layer[3] glass thickness (mm)	Interlayer thickness (mm) and type	Outer layer glass thickness (mm)	Panel size requirements	
				Minimum panel width (mm)	Maximum panel width (mm)
12	-	-	-	1000	1700/1900 (see below)
13.52	6	1.52 SAFELITE® STF (Sentry®)	6	1700	Refer manufacturing limits
15.2	8	1.2 SAFELITE® EVA	6	1000	1700/1900 (see below)
15	-	-	-	1000	1700/1900 (see below)
17.52	8	1.52 SAFELITE® STF (Sentry®)	8	1100	Refer manufacturing limits
17.2	8	1.2 SAFELITE® EVA	8	1000	1700/1900 (see below)
19.2	10	1.2 SAFELITE® EVA	8	1000	1700/1900 (see below)
21.52	10	1.52 SAFELITE® STF (Sentry®)	10	1100	Refer manufacturing limits

Note: 3) Inner layer refers to balcony side.

Maximum panel widths for Interlinking Rail/Bracket systems:

Applies where barrier is protecting a fall of 1.0m or more.

Interlinking Rail System	Maximum panel width (mm)	Position
S25 S40 Edgetec®220	1700 1700/1900 1700/1900	on glass only HB50 bracket/on glass HB50 bracket/on glass
MFG SB Bracket on SAFELITE® only	1900	Max 200mm from top of glass

Post failure requirements:

Applies where barrier is protecting a fall of 1.0m or more.

Glass Type	Requirement
TEMPAFLOAT®	Interlinking rail required in all cases
SAFELITE® EVA	Interlinking rail or SB brackets required all cases
SAFELITE® STF (Sentry®)	No interlinking rail required, minimum panel widths apply

NOTES:

- Refer to elevation drawings for Height 'H'.
- The specifier must ensure the balustrade height above floor level requirements as per the NZ Building Code are complied with.
- Design loads are in accordance with AS/NZS 1170.1:2002 table 3.3 and NZBC B1/VM1 and DBH Guidance on Barrier Design (March 2012). M* & T* denote bending moment (kNm/m width) and tension loads (kN/connection) respectively to be supported by the deck/pool structure.
- Capacity of all substructure is to be verified by building engineer or checked for accordance with NZS3604 (where applicable) prior to fixing. Fixing centres in tables above are applicable to concrete, steel and (where allowed) timber. Refer to fixing detail drawings for further details. All glass is to be toughened safety glass supplied by Metro Performance Glass, in either TEMPAFLOAT® Monolithic, SAFELITE® EVA Laminated or SAFELITE® STF (Sentry®) Laminated variants subject to requirements of the tables above.
- Glass & interlayer thicknesses shown are nominal thickness. Table is based on glass minimum tolerance as per NZS 4223.1:2008. Refer to the relevant fixing details on drawings: PG120B/C/RA(M10), PG120B/C/RA(M12), PG120B/S/BN, PG120S-180S/C/RA(M10).
- PG120S-180S/C/RA(M12) and PG120S-180S/S/BN, PG120S-180S/T/BN, PG120S-180S/T/CS. Design table only valid for use with PosiGlaze balustrade system.
- SLS Deflection in this instance is above recommended limit of 30mm excluding rotation in the supporting structure. In all cases the posiglaze channel must be fixed with EPDM layer directly to the relevant supporting structure.
- For designs outside the scope of these tables and ULS wind pressures exceeding those shown, specific design is required.
- Minimum glass strength 100MPa, all edges polished. Maximum 10mm tolerance allowed to H heights noted in table. Monolithic glass options only applicable for situations where all parts of glazing are within 5000mm of adjacent lower floor/ground below. Pool fences listed above refer to free standing structures where safety from falling is not applicable, design is based on Importance Level 1.