

50MM DOUBLEDISC MB50 BALUSTRADE SYSTEM

Design Tables

Safety From Falling Barriers

Occupancy A

All areas within or serving one dwelling including stairs, landings etc. but excluding external balconies and edges of roofs.

Glass Thickness t (mm)	Maximum Height H (mm)	Substrate Material	Fixing Dimensions (mm)			Design loads to deck structure			
			Max x	Min y	Max y	M* (kNm/m)	T* (kN)	SLS Wind (kPa)	ULS Wind (kPa)
12, 13.52, 15.2	1150	T, C, S	500	110	600	1.04	5.60	-	-
15, 17.2, 17.52	1150		500	110	600	1.04	5.60	-	-

Occupancy A/C3/B/E

As per NZS1170.1 Table 3.3

Glass Thickness t (mm)	Maximum Height H (mm)	Substrate Material	Fixing Dimensions (mm)			Design loads to deck structure			
			Max x	Min y	Max y	M* (kNm/m)	T* (kN)	SLS Wind (kPa)	ULS Wind (kPa)
12, 13.52, 15.2	950	T, C, S	425	110	600	1.07	5.09	1.68	2.37
	1050	T, C, S	400	110	600	1.18	5.20	1.52	2.14
13.52, 15.2	1100	T, C, S	400	110	600	1.24	5.40	1.45	2.05
	1150	C, S	400	110	600	1.29	5.60	1.39	1.96
15, 17.2, 17.52	950	T, C, S	475	110	600	1.07	5.68	1.68	2.37
	1050	T, C, S	425	110	600	1.18	5.52	1.52	2.14
	1100	T, C, S	400	110	600	1.24	5.40	1.45	2.05
	1150	C, S	400	110	600	1.29	5.60	1.39	1.96
	1250	C, S	400	110	600	1.41	6.01	1.28	1.80

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	Maximum Height H (mm)	Substrate Material	Fixing Dimensions (mm)			Design loads to deck structure	
				Max x	Min y	Max y	M* (kNm/m)	T* (kN)
12	Up to High	1250	T, C, S	400	110	600	0.90	3.85
15	Very High	1250	T, C, S	400	110	600	1.16	4.97
17.2	Extra High	1250	T, C, S	400	110	600	1.41	6.01

Key:

T = Timber, C = Concrete, S = Steel

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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	-	-	6	1000	1700/1900 (see below)
15.2	8	1.2 SAFELITE® EVA	-	1000	1700/1900 (see below)
17.2	8	1.2 SAFELITE® EVA	8	1000	1700/1900 (see below)
17.52	8	1.52 SAFELITE® STF (Sentry®)	8	1100	Refer manufacturing limits

Note: 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	100 - 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/fixing) 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: MB50/C/RA, MB50/S/RN (Open), MB50/S/RN (Hollow), MB50/T/RN, MB50/T/LS
- Design tables only valid for use with MB50 balustrade system.
- SLS Deflection in this instance is above recommended limit of 30mm excluding rotation in the supporting structure.
- In all cases the MB50 fixings must be fixed with Nylon washer 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.
- For safety from falling barriers other than 'A occupancy', fixing to timber only suitable for H ≤ 1100mm.