

# 75MM SINGLEDISC MB75 BALUSTRADE SYSTEM

## Design Tables

### Safety From Falling Barriers

#### Side Fix – Occupancy A/C3/B/E

SAFELITE® laminated toughened safety glass and TEMPAFLOAT® monolithic toughened safety glass, fixed to steel and concrete only.

Glass Thickness t (mm)	Occupancy	Substrate Material	Maximum Design Height H (mm)	MB75 Disc Spacing (mm) Max	Design loads to deck structure		Max Imposed Wind Loads	
					M* (kNm/m)	T* (kN)	SLS Wind (kPa)	ULS Wind (kPa)
12, 13.52, 15.2	A	C, S	1150	400	1.04	17.31	-	-
	C3/B/E	C, S	1000	400	1.13	17.66	1.60	2.25
			1100	400	1.24	19.42	1.46	2.05
1125	400	1.27	19.86	1.42	2.00			
15, 17.2, 17.52	A	C, S	1250	400	1.13	18.18	-	-
	C3/B/E	C, S	1150	400	1.29	20.30	1.39	1.96
			1200	400	1.35	19.14	1.34	1.88
1250			400	1.41	17.82	1.28	1.80	

#### Side Fix

Free Standing Pool Fences (not protecting a fall of 1.0m or more) fixed to steel and concrete only.

Glass Thickness t (mm)	Substrate Material	Maximum Design Height H (mm)	MB75 Disc Spacing (mm) Max	Design loads to deck structure		Max Imposed Wind Loads	
				M* (kNm/m)	T* (kN)	SLS Wind (kPa)	ULS Wind (kPa)
12	C, S	1300	400	1.27	19.86	1.07	1.50
12	C, S	1350	400	1.00	17.66	0.84	1.18
15	C, S	1350	300	1.41	17.82	1.10	1.55

**Key:**

T = Timber, C = Concrete, S = Steel

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## Design Tables

### Glass thickness key:

Glass Thickness t (mm)	Inner layer <sup>3</sup> 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	2000	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	1500	Refer manufacturing limits
17.2	8	1.2 SAFELITE® EVA	8	1000	1700/1900 (see below)

Note: Inner layer refers to balcony/floor 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	1700	on glass only
S40	1700/1900	HB50 bracket/on glass
Edgetec®	1700/1900	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:

- Design tables only valid for use with Metro MB75 balustrade system.
- Refer to installation and 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 sub structure.
- Capacity of all substructure is to be verified by building engineer prior to fixing.
- Fixing centres in tables above are applicable to concrete and steel only. 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 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: MB75/C/M12, MB75/S/RM(Open), MB75/S/RN(Hollow)
- The tables for this balustrade system are based on an SLS deflection limit of 50mm. While greater than the suggested limit of height/60 as specified in NZS1170.0 for post and rail handrail systems, this is deemed acceptable based on the nature of the cantilevered glass system.
- In all cases the MB75 fixings must be fixed with 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.