STRUCTURAL REPORT		Project No. 21154-4	Issue No. 6
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Load/Span Tables for an Aluminium Wall Batten
For
Industrial Investments Group Ltd

DOCUMENT CONTROL

ISSUE NUMBER	DATE OF ISSUE	EXPIRATION OF PS1	PURPOSE OF ISSUE
1	9 February 2024	N/A	Original Calculations
2	12 February 2024	N/A	Top Hat Batten Added
3	5 April 2024	N/A	Report Revised
4	29 April 2024	N/A	Fixings Revised
5	11 June 2024	N/A	NZS 3604 Wind Loads Added
6	**30 September 2024**	**N/A**	**Minor Corrections**

adding 'enginuity' to building projects

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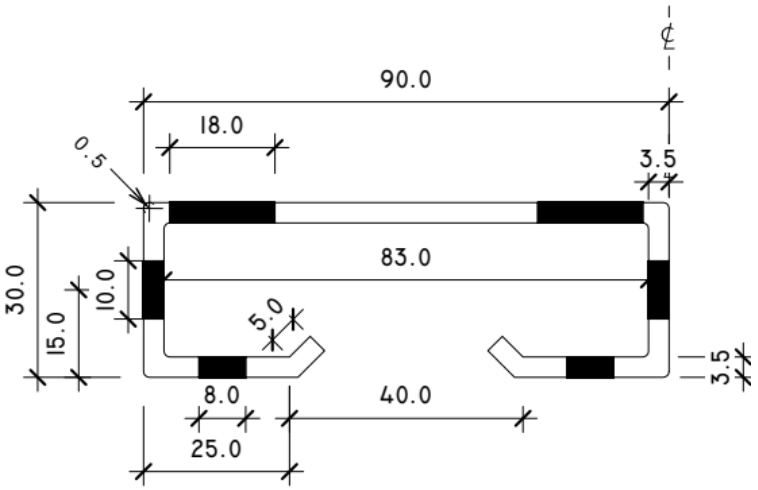
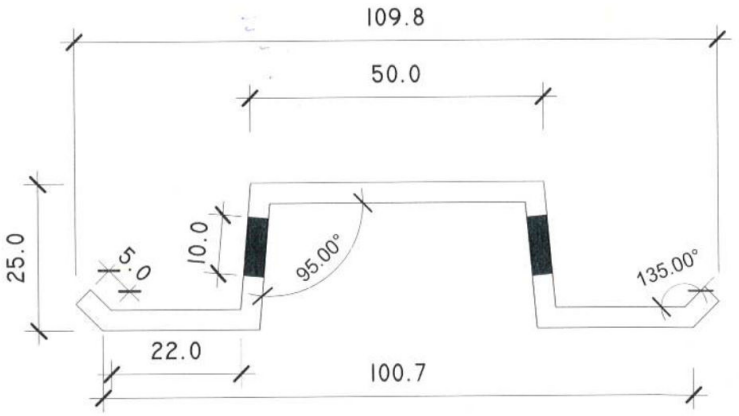
PRODUCT DESCRIPTION

1 BATTEN PROFILES

1.1 CHANNEL SECTION



1.2 TOP HAT SECTION



2 BATTEN MATERIAL

The batten is an extruded section formed from 6061-T6 Aluminium Alloy, with a wall thickness of 3.5mm.

3 BATTEN FIXING

The batten is fixed to studs using 2No. 10g Tek screws (or equivalent) at each stud.

The cladding is fixed to the batten using 1No. 12g Tek screws (or equivalent).
Alternatively, the cladding is fixed to the batten using 2No. 10g Tek screws.

4 WIND LOAD TO NZS 3604

The Code of Practice published by the New Zealand Metal Roofing Manufacturers Association (NZMRM) provides load-span tables for a range of corrugated and trapezoidal profiled steel and aluminium roofing products. They also present pressures for each of the design wind speeds listed in NZS 3604. ULS values are shown in the table below.

	Wind Speed to NZS 3604				
	Low	Medium	High	Very High	Extra High
Pressure (kPa)	1.0	1.4	2.0	2.6	3.1

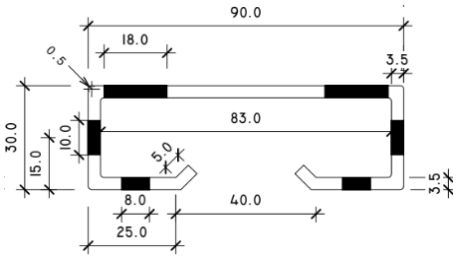
LOAD-SPAN TABLES & GRAPHS

1. CHANNEL SECTION

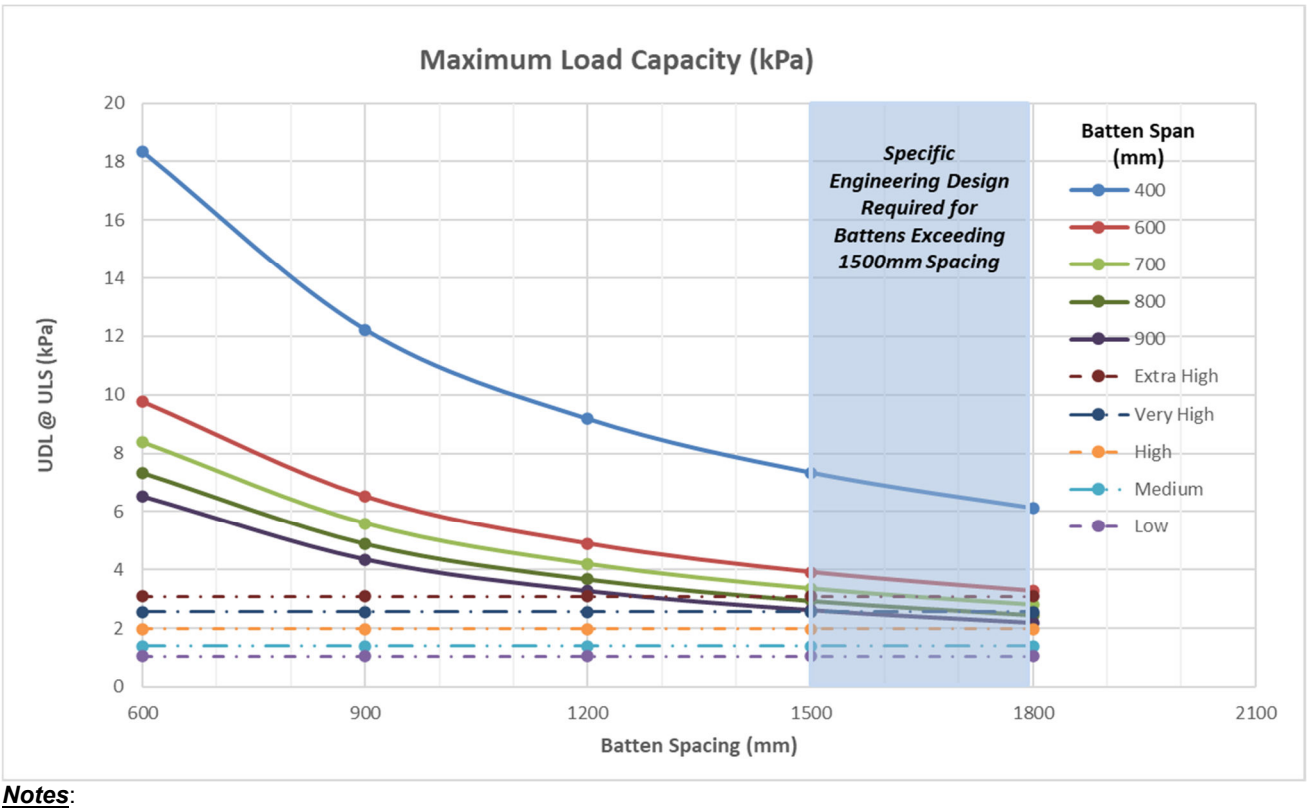
2-SPAN CONTINUOUS BATTENS

Maximum Batten Load @ ULS under Wind Suction (kPa) (2-Span Continuous Channel Batten)

Span (mm)	Spacing (mm) 600	900	1200	1500	1800
400	14.0	9.4	7.0	5.6	4.7
600	9.8	6.5	4.9	3.9	3.3
700	8.4	5.6	4.2	3.4	2.8
800	7.3	4.9	3.7	2.9	2.4
900	6.5	4.3	3.3	2.6	2.2



Load shown is the minimum values for each batten spacing and span for bending, shear, tension, deflection, & fixing capacity



Notes:

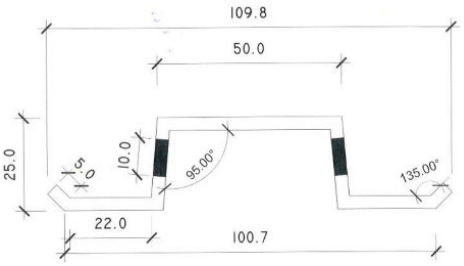
1. The batten is an extruded section formed from **6061-T6 Aluminium Alloy**
2. The batten wall thickness is **3.5mm**
3. The load span charts shown above are suitable only for walls and roofs under wind loading @ ULS.
4. Dead Load has been ignored for the worst Load Case which is Wind Suction forcing the fixings to work in tension, Pull Out and Pull Over.
5. The loading is shown for a 2-span continuous span batten.
6. Deflection limit of Span / 150 for SLS has been applied.
7. Within the above range, failure under suction is governed by the fixings. (Failure under positive pressure based on the batten bending capacity can be significantly higher.)
8. Batten is fixed to studs using 2No. 10g Tek screws (or equivalent) at each stud. **For 2 No. 10g Tek Screws, the Max Support Load is 4.4kN**
9. The cladding is fixed to the batten using 1No. 12g Tek screws. **For 1 No. 12g Tek Screws the Design Pull Out Force is 2.1kN.** Batten Capacity related to Pull Out Load is based on fixing spacing = **200mm**.
10. Fixing capacities include a Capacity Reduction Factor of 0.5.
11. Batten Spacing = Span of Cladding. Batten Span = Stud Spacing.
12. The table and graph above combine the governing mode of failure between Bending, Shear, Tension, Deflection, and the Fixings.

2. TOP HAT SECTION

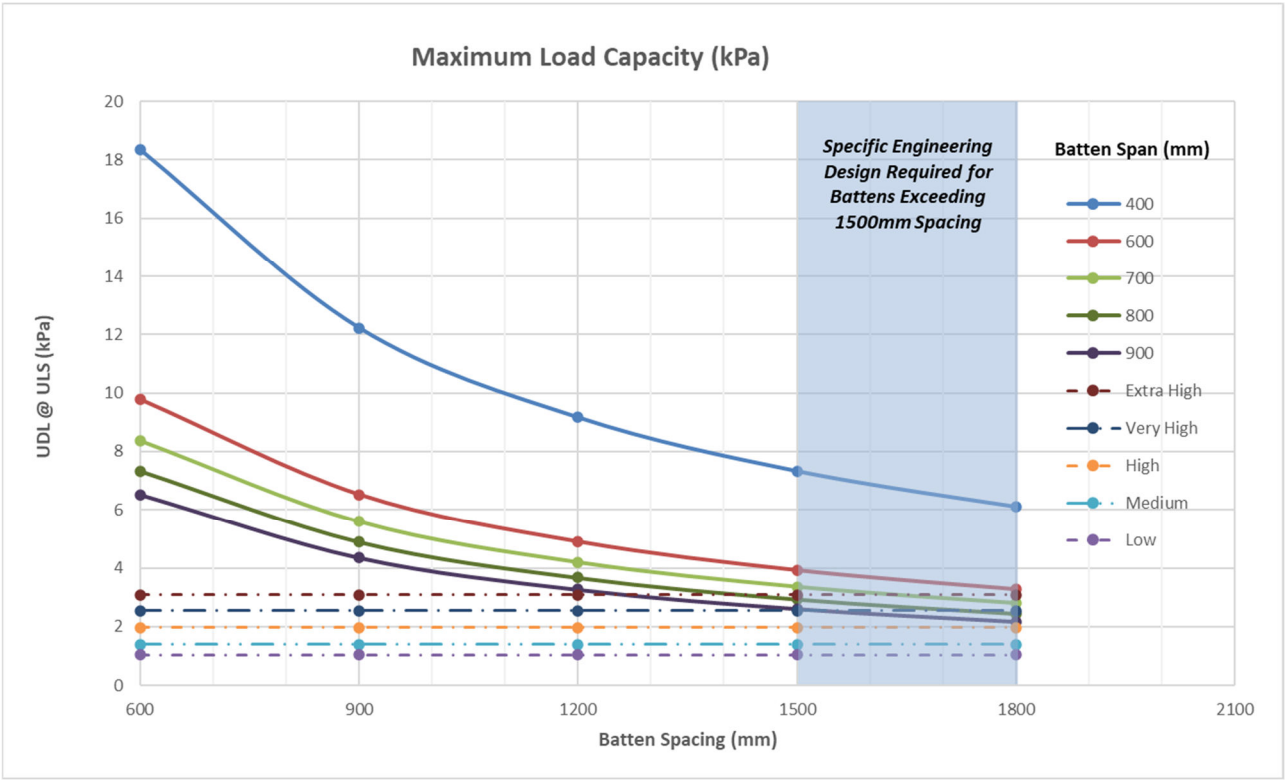
2-SPAN CONTINUOUS BATTENS

Maximum Batten Load @ ULS under Wind Suction (kPa) (2-Span Continuous Top-Hat Batten)

	Spacing (mm)				
Span (mm)	600	900	1200	1500	1800
400	14.0	9.4	7.0	5.6	4.7
600	9.8	6.5	4.9	3.9	3.3
700	8.4	5.6	4.2	3.4	2.8
800	7.3	4.9	3.7	2.9	2.4
900	6.5	4.3	3.3	2.6	2.2



Load shown is the minimum values for each batten spacing and span for bending, shear, tension, deflection, & fixing capacity



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