ENGINEERING REFERENCES & DESIGN INFORMATION FOR LOUVRETEC SYSTEMS & SUPPORT FRAMES

09 March 2025

The following calculations and design tables apply exclusively to LouvreTec Aluminium Louvre Systems and their supporting structures. Substitutions are not permitted.

Users must ensure they reference the most recent version of the design manual, as the calculations and tables are subject to updates in response to design code changes and amendments at the time of publication.

Maximum spans for aluminium members have been calculated based on wind zones and wind speeds derived from NZS 3604:2011, in alignment with AS/NZS 1170:2021. Ultimate Limit State (ULS) wind speeds are based on a 1-in-500-year return period and are applied at the building, with site exposure multipliers accounted for. Serviceability Limit State (SLS) wind speeds correspond to a 1-in-25-year return period. Associated wind pressures are determined using AS/NZS 1170.2:2021 – Structural Design Actions, Part 2: Wind Actions and are reduced to reflect the classification of louvre frames as Importance Level 1 structures. Section capacities are calculated in accordance with AS/NZS 1664.1:1997 – Aluminium Structures, Part 1: Limit State Design.

Deflection limits are as follows:

- Dead load deflections: Limited to span/250 for both louvres and beams, with an additional cap of 20mm for louvre dead load deflections.
- Wind load deflections: Restricted to span/40 for louvres, span/250 for beams and height/100 for posts.

Wind Zone	**ULS Wind Speed (m/s)**	**(km/h)**
Low	32	115
Medium	37	133
High	44	158
Very High	50	179
Extra High	55	198

The following load case combinations have been applied to the member loads
0.9G,W ULS uplift pressure
1.2G, W ULS downthrust pressure
G, W SLD for deflection

Notes:

1) When the louvre structure is to be attached to an existing building, care must be taken to ensure that supporting structure has adequate strength to carry the additional loads. If there is any doubt contact Louvretec for advice.

CODES OF PRACTICE

Design has been carried out using the following codes of practice:

Structural Design Actions:
Part 0: General Principles - AS/NZS 1170.0:2002
Part 1: Permanent, imposed and other actions - AS/NZS 1170.1:2002
Part 2: Wind Actions - AS/NZS 1170.2.2021

Aluminium Structures:
Part 1: Limit state design - AS/NZS 1664.1: 1997

Timber-framed Buildings:
NZS 3604:2011

SPIRAL PIVOT SYSTEM LOAD TEST

Louvretec Products Ltd has conducted a static load test on the Spiral Pivot System. The test confirmed that the Spiral Pivot System is capable of resisting a downward static load greater than would be generated by the application of the structural design loads used in this publication to an equivalent structure. More detailed test information is available from Louvretec upon request.

CATEGORIES, TYPES AND INTENDED PURPOSES OF PRODUCER STATEMENTS

Design	PS1 Producer Statement Design	Used by designers to certify specific design elements comply with specified standards or codes in order to comply with the provisions of the Building Code.
	PS2 Producer Statement Design Review	Used by people undertaking a peer review of all or part of a design to say that the design or the specified part of the design complies with specified standards or codes in order to comply with the provisions of the Building Code.
Construction	PS3 Producer Statement Construction	Used by constructors or trades people to certify that the specified building work that they have undertaken complies with the building consent.
	PS4 Producer Statement Construction Review	Used by people undertaking a peer review of specified building work undertaken by constructors or trades people to certify that the building work that has been undertaken complies with the building consent.