

## LOUVRE FIN SPANS

Table 1 – Johnson & Couzins Maximum Louvre Fin Spans

Louvre Fin Type	Medium wind zone (37m/s)	High wind zones (44 m/s)	Very High wind zone (50 m/s)
Light Louvre	3.4 m	3.0 m	2.6 m
Heavy Louvre	3.645 m	3.645 m	3.645 m

Notes:

1. Site wind speed is to be verified by others.
2. Includes allowance to resist up to 2.0 kPa open ground snow load.
3. A maximum louvre fin deflection of 60mm has been used. Specific Engineering Design is required for louvres which will be located within areas sensitive to deflections.
4. All spans shown above are maximum values.
5. It has been assumed that the louvres will remain in an “open” position during a heavy snow event.
6. The louvre fins will not be walked on.
7. The Concertina Louvre System is restricted to a maximum total roof width of 4.0m and 6.0m length.
8. The fin span is measured from between the inside edges of the drive boxes.

## CONCERTINA LOUVRE FRAME MEMBER SPANS

General Notes:

1. Site wind speed is to be verified by others.
2. Perimeter beam supports half of the louvre span while a central beam supports louvres on both sides.
3. Spans calculated rely on correct selection of louvre fin.
4. A maximum beam deflection limit of 40mm has been used for members aside from Table 2e. Specific Engineering Design is required for louvres which will be located within areas sensitive to deflections.
5. All spans shown below are maximum values and are measured from the inside edges of the posts.
6. It has been assumed that the louvres will remain in an “open” position during a heavy snow event.
7. Note that the central beam in the Concertina Louvre System is a double beam.
8. We have assumed a drive box will be located adjacent to the beams.

Table 2a – Johnson & Couzins Maximum Beam (200x50x3 RHS) Spans Snow Load  $\leq$  0.9kPa

Beam Location	Medium wind zone (37m/s)		High wind zone (44m/s)		Very High wind zone (50m/s)	
	Light Louvre	Heavy Louvre	Light Louvre	Heavy Louvre	Light Louvre	Heavy Louvre
Perimeter	6.2 m	5.7 m	5.6 m	4.8 m	5.2 m	4.3 m
Central	6.2 m	5.8 m	5.8 m	5.4 m	5.7 m	5.2 m
Cantilever	1.9 m	1.8 m	1.9 m	1.8 m	1.9 m	1.7 m

Table Specific Notes:

1. Includes allowance to resist up to 0.9 kPa open ground snow load.
2. Refer to the “General Notes” for all other notes which are not specific to this particular table.

Table 2b – Johnson & Couzins Maximum Beam (200x50x3 RHS) Spans Snow Load  $\leq$  1.5kPa

Beam Location	Medium wind zone (37m/s)		High wind zone (44m/s)		Very High wind zone (50m/s)	
	Light Louvre	Heavy Louvre	Light Louvre	Heavy Louvre	Light Louvre	Heavy Louvre
Perimeter	5.9 m	5.1 m	5.6 m	4.8 m	5.2 m	4.3 m
Central	6.2 m	5.8 m	5.8 m	5.4 m	5.7 m	5.2 m
Cantilever	1.7 m	1.4 m	1.8 m	1.5 m	1.9 m	1.6 m

Table Specific Notes:

1. Includes allowance to resist up to 1.5 kPa open ground snow load.
2. Refer to the “General Notes” for all other notes which are not specific to this particular table.

**Table 2c – Johnson & Couzins Maximum Beam (200x50x3 RHS) Spans for Snow Load ≤ 2.0kPa**

Beam Location	Medium wind zone (37m/s)		High wind zone (44m/s)		Very High wind zone (50m/s)	
	Light Louvre	Heavy Louvre	Light Louvre	Heavy Louvre	Light Louvre	Heavy Louvre
Perimeter	5.1 m	4.5 m	5.5 m	4.5 m	5.2 m	4.3 m
Central	6.2 m	5.8 m	5.8 m	5.4 m	5.7 m	5.2 m
Cantilever	1.5 m	1.3 m	1.6 m	1.3 m	1.7 m	1.4 m

Table Specific Notes:

1. Includes allowance to resist up to 2.0 kPa open ground snow load.
2. Refer to the “General Notes” for all other notes which are not specific to this particular table.

**Table 2d – Johnson & Couzins Max Double Beam (2/200x50x3 RHS) Spans with Snow Load ≤ 2.0kPa**

Beam Location	Medium wind zone (37m/s)		High wind zone (44m/s)		Very High wind zone (50m/s)	
	Light Louvre	Heavy Louvre	Light Louvre	Heavy Louvre	Light Louvre	Heavy Louvre
Perimeter	7.4 m	6.3 m	7.0 m	6.3 m	6.8 m	6.2 m
Central	6.2 m	5.8 m	5.8 m	5.4 m	5.7 m	5.2 m
Cantilever	2.0 m	2.0 m	2.0 m	2.0 m	2.0 m	2.0 m

Table Specific Notes:

1. Includes allowance to resist up to 2.0 kPa open ground snow load.
2. These beam spans are relevant for double beams made from a 200x50x3 and a 300x50x3.5 beam.
3. Refer to the “General Notes” for all other notes which are not specific to this particular table.

**Table 2e – Johnson & Couzins Max Perimeter Beam (200x50x3 RHS) Spans Supporting Shutters for various snow loads**

Maximum Site Snow Loading	Medium wind zone (37m/s)		High wind zone (44m/s)		Very High wind zone (50m/s)	
	Light Louvre	Heavy Louvre	Light Louvre	Heavy Louvre	Light Louvre	Heavy Louvre
0.9 kPa	4.8 m	4.5 m	4.6 m	4.2 m	4.4 m	4.0 m
1.5 kPa	4.8 m	4.5 m	4.6 m	4.2 m	4.4 m	4.0 m
2.0 kPa	4.7 m	4.2 m	4.6 m	4.2 m	4.4 m	4.0 m

Table Specific Notes:

1. A maximum beam deflection limit of 15mm has been used. Specific Engineering Design is required for louvres which will be located within areas sensitive to deflections.
2. Refer to the “General Notes” for all other notes which are not specific to this particular table.

**Table 2f– Johnson & Couzins Max Beam (250x50x3 RHS) Spans with Snow Load ≤ 0.9kPa**

Beam Location	Medium wind zone (37m/s)		High wind zone (44m/s)		Very High wind zone (50m/s)	
	Light Louvre	Heavy Louvre	Light Louvre	Heavy Louvre	Light Louvre	Heavy Louvre
Perimeter	7.0 m	6.4 m	6.3 m	5.4 m	5.9 m	4.9 m
Central	7.0 m	6.5 m	6.6 m	6.1 m	6.4 m	5.8 m
Cantilever	1.9 m	1.9 m	1.9 m	1.9 m	1.9 m	1.9 m

Table Specific Notes:

1. Includes allowance to resist up to 0.9 kPa open ground snow load.
2. Refer to the “General Notes” for all other notes which are not specific to this particular table.

**Table 2g– Johnson & Couzins Max Beam (250x50x3 RHS) Spans with Snow Load ≤ 1.5kPa**

Beam Location	Medium wind zone (37m/s)		High wind zone (44m/s)		Very High wind zone (50m/s)	
	Light Louvre	Heavy Louvre	Light Louvre	Heavy Louvre	Light Louvre	Heavy Louvre
Perimeter	6.4 m	5.5 m	6.3 m	5.4 m	5.9 m	4.9 m
Central	7.0 m	6.5 m	6.6 m	6.1 m	6.4 m	5.8 m
Cantilever	1.7 m	1.7 m	1.7 m	1.7 m	1.7 m	1.7 m

Table Specific Notes:

1. Includes allowance to resist up to 1.5 kPa open ground snow load.
2. Refer to the “General Notes” for all other notes which are not specific to this particular table.

**Table 2h– Johnson & Couzins Max Beam (250x50x3 RHS) Spans with Snow Load ≤ 2.0kPa**

Beam Location	Medium wind zone (37m/s)		High wind zone (44m/s)		Very High wind zone (50m/s)	
	Light Louvre	Heavy Louvre	Light Louvre	Heavy Louvre	Light Louvre	Heavy Louvre
Perimeter	5.6 m	4.9 m	6.0 m	5.1 m	5.9 m	4.9 m
Central	7.0 m	6.5 m	6.6 m	6.1 m	6.4 m	5.8 m
Cantilever	1.5 m	1.5 m	1.5 m	1.5 m	1.5 m	1.5 m

Table Specific Notes:

1. Includes allowance to resist up to 2.0 kPa open ground snow load.
2. Refer to the “General Notes” for all other notes which are not specific to this particular table.

**Table 2i– Johnson & Couzins Max Beam (300x50x3.5 RHS) Spans with Snow Load ≤ 0.9kPa**

Beam Location	Medium wind zone (37m/s)		High wind zone (44m/s)		Very High wind zone (50m/s)	
	Light Louvre	Heavy Louvre	Light Louvre	Heavy Louvre	Light Louvre	Heavy Louvre
Perimeter	7.1 m	6.3 m	6.2 m	5.4 m	5.8 m	4.8 m
Central	8.1 m	7.6 m	7.7 m	7.1 m	7.4 m	6.8 m
Cantilever	2.0 m	2.0 m	2.0 m	2.0 m	2.0 m	2.0 m

Table Specific Notes:

1. Includes allowance to resist up to 0.9 kPa open ground snow load.
2. Refer to the “General Notes” for all other notes which are not specific to this particular table.

**Table 2j– Johnson & Couzins Max Beam (300x50x3.5 RHS) Spans with Snow Load ≤ 1.5 kPa**

Beam Location	Medium wind zone (37m/s)		High wind zone (44m/s)		Very High wind zone (50m/s)	
	Light Louvre	Heavy Louvre	Light Louvre	Heavy Louvre	Light Louvre	Heavy Louvre
Perimeter	6.6 m	5.7 m	6.2 m	5.4 m	5.8 m	4.8 m
Central	8.1 m	7.6 m	7.7 m	7.1 m	7.4 m	6.8 m
Cantilever	1.8 m	1.8 m	1.8 m	1.8 m	1.8 m	1.8 m

Table Specific Notes:

1. Includes allowance to resist up to 1.5 kPa open ground snow load.
2. Refer to the “General Notes” for all other notes which are not specific to this particular table.

**Table 2k– Johnson & Couzins Max Double Beam (300x50x3.5 RHS) Spans with Snow Load  $\leq 2.0\text{kPa}$**

Beam Location	Medium wind zone (37m/s)		High wind zone (44m/s)		Very High wind zone (50m/s)	
	Light Louvre	Heavy Louvre	Light Louvre	Heavy Louvre	Light Louvre	Heavy Louvre
Perimeter	5.8 m	5.0 m	6.2 m	5.2 m	5.8 m	4.8 m
Central	8.1 m	7.2 m	7.7 m	7.1 m	7.4 m	6.8 m
Cantilever	1.6 m	1.6 m	1.6 m	1.6 m	1.6 m	1.6 m

Table Specific Notes:

1. Includes allowance to resist up to 2.0 kPa open ground snow load.
2. Refer to the “General Notes” for all other notes which are not specific to this particular table.

**Table 2l – Johnson & Couzins Max Single Beam (200x50x5 RHS) Spans with Snow Load  $\leq 0.9\text{kPa}$**

Beam Location	Medium wind zone (37m/s)		High wind zone (44m/s)		Very High wind zone (50m/s)	
	Light Louvre	Heavy Louvre	Light Louvre	Heavy Louvre	Light Louvre	Heavy Louvre
Perimeter	6.8 m	6.3 m	6.4 m	5.8 m	6.2 m	5.2 m
Central	6.8 m	6.3 m	6.4 m	5.9 m	6.2 m	5.7 m
Cantilever	2.0 m	1.9 m	2.0 m	1.9 m	2.0 m	1.9 m

Table Specific Notes:

1. Includes allowance to resist up to 0.9 kPa open ground snow load.
2. Refer to the “General Notes” for all other notes which are not specific to this particular table.

**Table 2m – Johnson & Couzins Max Single Beam (200x50x5 RHS) Spans with Snow Load  $\leq 1.5\text{kPa}$**

Beam Location	Medium wind zone (37m/s)		High wind zone (44m/s)		Very High wind zone (50m/s)	
	Light Louvre	Heavy Louvre	Light Louvre	Heavy Louvre	Light Louvre	Heavy Louvre
Perimeter	6.8 m	5.9 m	6.4 m	5.8 m	6.2 m	5.2 m
Central	6.8 m	6.3 m	6.4 m	5.9 m	6.2 m	5.7 m
Cantilever	1.8 m	1.5 m	1.9 m	1.6 m	2.0 m	1.7 m

Table Specific Notes:

1. Includes allowance to resist up to 1.5 kPa open ground snow load.
2. Refer to the “General Notes” for all other notes which are not specific to this particular table.

**Table 2n – Johnson & Couzins Max Single Beam (200x50x5 RHS) Spans with Snow Load  $\leq 2.0\text{kPa}$**

Beam Location	Medium wind zone (37m/s)		High wind zone (44m/s)		Very High wind zone (50m/s)	
	Light Louvre	Heavy Louvre	Light Louvre	Heavy Louvre	Light Louvre	Heavy Louvre
Perimeter	6.0 m	5.2 m	6.4 m	5.4 m	6.2 m	5.2 m
Central	6.8 m	6.3 m	6.4 m	5.9 m	6.2 m	5.7 m
Cantilever	1.6 m	1.4 m	1.7 m	1.4 m	1.8 m	1.5 m

Table Specific Notes:

1. Includes allowance to resist up to 2.0 kPa open ground snow load.
2. Refer to the “General Notes” for all other notes which are not specific to this particular table.

## CANTILEVERED POST FOOTING SIZES

**Table 3a – Min cantilevered post footing dimensions – Central post between two bays of louvres**

Louvre Fin Type	Medium wind zone (37m/s)	High wind zones (44 m/s)	Very High wind zone (50 m/s)
<b>Light Louvre</b>	1350 mm deep	1500 mm deep	Specific Design
<b>Heavy Louvre</b>	1300 mm deep	1450 mm deep	Specific Design

Notes:

1. Site wind speed to be verified by others. All cantilevered footings are to be 600mm square.
2. Footing depths calculated rely on correct selection of louvre fin.
3. A maximum lateral deflection limit of 100mm has been used for the louvre posts. Specific design is required for louvres which will be located within areas sensitive to deflections.
4. The 75x75x5 SHS stainless steel insert shall extend a minimum of 1600mm above ground level inside of the aluminium post for a medium wind zone and 1800mm above ground level for a high wind (height of socket inside of the aluminium post).
5. All cantilevered posts in Very High wind zones require specific engineering design.

**Table 3b – Min cantilevered post footing dimensions required – Corner post**

Louvre Fin Type	Medium wind zone (37m/s)	High wind zones (44 m/s)	Very High wind zone (50 m/s)
<b>Light Louvre</b>	1000 mm deep	1150 mm deep	Specific Design
<b>Heavy Louvre</b>	1000 mm deep	1100 mm deep	Specific Design

Notes:

1. Site wind speed to be verified by others. All cantilevered footings are to be 600mm square.
2. Footing depths calculated rely on correct selection of louvre fin.
3. A maximum lateral deflection limit of 100mm has been used for the louvre posts. Specific design is required for louvres which will be located within areas sensitive to deflections.
4. The 75x75x5 SHS stainless steel insert will extend a minimum of 400mm above ground level inside of the aluminium post for a medium wind zone and 900mm above ground level for a high wind (height of socket inside of the aluminium post).
5. All cantilevered posts in Very High wind zones require specific engineering design.