

1028

1012

1006

998

LOW

1008

1012

Wind Loads & Spans

SPECIFICATION
DATA



Wind Loads & Spans

Designwall™ 2000 Flat Wall Panels: 2" thick, ISO core, 24" module width.

Wind Load (psf)	Single Span		Double Span		Triple Span	
	Maximum Span	Limiting Factor	Maximum Span	Limiting Factor	Maximum Span	Limiting Factor
20	10' -3"	(D)	11' -9"	(D)	10' -0"	(L)
25	9' -1"	(D)	10' -1"	(N)	10' -0"	(L)
30	8' -2"	(D)	8' -6"	(N)	8' -11"	(D)
35	7' -5"	(D)	7' -5"	(N)	7' -10"	(N)
40	6' -9"	(D)	6' -7"	(N)	6' -11"	(N)
45	6' -3"	(D)	5' -11"	(N)	6' -2"	(N)
50	5' -10"	(D)	5' -4"	(N)	5' -7"	(N)
55	5' -5"	(D)	4' -11"	(N)	5' -1"	(N)
60	5' -1"	(D)	4' -7"	(N)	4' -8"	(N)
65	4' -9"	(D)	4' -3"	(N)	4' -4"	(N)
70	4' -6"	(D)	3' -11"	(N)	4' -0"	(N)
75	4' -3"	(D)	3' -9"	(N)	3' -9"	(N)
80	4' -0"	(D)	3' -6"	(N)	3' -7"	(N)
85	3' -10"	(D)	3' -4"	(N)	3' -4"	(N)
90	3' -8"	(D)	3' -2"	(N)	3' -2"	(N)

Designwall™ 2000 Flat Wall Panels: 2" thick, ISO core, 30" module width.

Wind Load (psf)	Single Span		Double Span		Triple Span	
	Maximum Span	Limiting Factor	Maximum Span	Limiting Factor	Maximum Span	Limiting Factor
20	10' -3"	(D)	11' -8"	(N)	10' -0"	(L)
25	9' -1"	(D)	9' -6"	(N)	10' -0"	(L)
30	8' -2"	(D)	8' -0"	(N)	8' -6"	(N)
35	7' -5"	(D)	7' -0"	(N)	7' -4"	(N)
40	6' -9"	(D)	6' -2"	(N)	6' -6"	(N)
45	6' -3"	(D)	5' -7"	(N)	5' -9"	(N)
50	5' -10"	(D)	5' -1"	(N)	5' -3"	(N)
55	5' -5"	(D)	4' -8"	(N)	4' -9"	(N)
60	5' -1"	(D)	4' -4"	(N)	4' -5"	(N)
65	4' -9"	(D)	4' -0"	(N)	4' -1"	(N)
70	4' -6"	(D)	3' -9"	(N)	3' -9"	(N)
75	4' -3"	(D)	3' -6"	(N)	3' -6"	(N)
80	4' -0"	(D)	3' -4"	(N)	3' -4"	(N)
85	3' -10"	(D)	3' -1"	(N)	3' -2"	(N)
90	3' -8"	(D)	2' -11"	(N)	3' -0"	(N)

Notes:

1. Wind Load charts based on 1/180 deflection limit.
2. Exterior face 22 gauge steel, Interior face 24 gauge steel.
3. Spans may be governed by other factors including deflection due to temperature differential, unequal span conditions, and fastener pullout limits in lighter gauge supports. Consult Kingspan for specific project applications.
4. Limiting factor: (N) Negative Load / Connection Strength, (S) Core Shear, (B) Flexural Bending, (D) Deflection, (L) Maximum Fabrication Length.
5. Values based on single #14 fastener into 3/16" steel thickness to achieve full spanning capacity of panel. For lighter gauge supports spans may be further limited by fastener pullout. See Fastener Section following these Wind Load charts.

Designwall™ 2000 Flat Wall Panels: 2" thick, ISO core, 36" module width.

Wind Load (psf)	Single Span		Double Span		Triple Span	
	Maximum Span	Limiting Factor	Maximum Span	Limiting Factor	Maximum Span	Limiting Factor
20	10' -3"	(D)	10' -11"	(N)	10' -0"	(L)
25	9' -1"	(D)	8' -11"	(N)	9' -6"	(N)
30	8' -2"	(D)	7' -6"	(N)	8' -0"	(N)
35	7' -5"	(D)	6' -7"	(N)	6' -10"	(N)
40	6' -9"	(D)	5' -10"	(N)	6' -0"	(N)
45	6' -3"	(D)	5' -3"	(N)	5' -5"	(N)
50	5' -10"	(D)	4' -9"	(N)	4' -11"	(N)
55	5' -5"	(D)	4' -4"	(N)	4' -5"	(N)
60	5' -1"	(D)	4' -0"	(N)	4' -1"	(N)
65	4' -9"	(D)	3' -9"	(N)	3' -10"	(N)
70	4' -6"	(D)	3' -6"	(N)	3' -6"	(N)
75	4' -3"	(D)	3' -3"	(N)	3' -4"	(N)
80	4' -0"	(D)	3' -1"	(N)	3' -1"	(N)
85	3' -10"	(D)	2' -11"	(N)	2' -11"	(N)
90	3' -8"	(D)	2' -9"	(N)	2' -9"	(N)

Designwall™ 4000 Flat Wall Panels: 2" thick, ISO core, 24" module width.

Wind Load (psf)	Single Span		Double Span		Triple Span	
	Maximum Span	Limiting Factor	Maximum Span	Limiting Factor	Maximum Span	Limiting Factor
20	11' -8"	(D)	14' -0"	(B)	10' -0"	(L)
25	10' -7"	(D)	12' -8"	(D)	10' -0"	(L)
30	9' -8"	(D)	10' -10"	(S)	10' -0"	(L)
35	9' -0"	(D)	9' -4"	(S)	9' -6"	(S)
40	8' -5"	(D)	8' -3"	(S)	8' -4"	(S)
45	7' -10"	(D)	7' -5"	(S)	7' -5"	(S)
50	7' -5"	(D)	6' -9"	(S)	6' -9"	(S)
55	7' -1"	(D)	6' -2"	(S)	6' -2"	(S)
60	6' -6"	(S)	5' -8"	(S)	5' -8"	(S)
65	6' -0"	(S)	5' -4"	(S)	5' -3"	(S)
70	5' -7"	(S)	5' -0"	(S)	4' -11"	(S)
75	5' -3"	(S)	4' -8"	(S)	4' -7"	(S)
80	4' -11"	(S)	4' -5"	(S)	4' -4"	(S)
85	4' -7"	(S)	4' -2"	(S)	4' -1"	(S)
90	4' -4"	(S)	4' -0"	(S)	3' -11"	(S)

Notes:

1. Wind Load charts based on $1/180$ deflection limit.
2. Exterior face 22 gauge steel, Interior face 24 gauge steel.
3. Spans may be governed by other factors including deflection due to temperature differential, unequal span conditions, and fastener pullout limits in lighter gauge supports. Consult Kingspan for specific project applications.
4. Limiting factor: (N) Negative Load / Connection Strength, (S) Core Shear, (B) Flexural Bending, (D) Deflection, (L) Maximum Fabrication Length.
5. Values based on single #14 fastener into $3/16$ " steel thickness to achieve full spanning capacity of panel. For lighter gauge supports spans may be further limited by fastener pullout. See Fastener Section following these Wind Load charts.

Wind Loads & Spans

Designwall™ 4000 Flat Wall Panels: 2" thick, ISO core, 30" module width.

Wind Load (psf)	Single Span		Double Span		Triple Span	
	Maximum Span	Limiting Factor	Maximum Span	Limiting Factor	Maximum Span	Limiting Factor
20	11' -8"	(D)	14' -0"	(B)	10' -0"	(L)
25	10' -6"	(D)	12' -8"	(B)	10' -0"	(L)
30	9' -8"	(D)	10' -10"	(S)	10' -0"	(L)
35	9' -0"	(D)	9' -4"	(S)	9' -6"	(S)
40	8' -4"	(D)	8' -3"	(S)	8' -4"	(S)
45	7' -10"	(D)	7' -5"	(S)	7' -5"	(S)
50	7' -5"	(D)	6' -9"	(S)	6' -9"	(S)
55	7' -1"	(D)	6' -2"	(S)	6' -2"	(S)
60	6' -6"	(S)	5' -8"	(S)	5' -8"	(S)
65	6' -0"	(S)	5' -4"	(S)	5' -3"	(S)
70	5' -7"	(S)	5' -0"	(S)	4' -11"	(S)
75	5' -3"	(S)	4' -8"	(S)	4' -7"	(S)
80	4' -11"	(S)	4' -5"	(S)	4' -4"	(S)
85	4' -7"	(S)	4' -2"	(S)	4' -1"	(S)
90	4' -4"	(S)	4' -0"	(S)	3' -11"	(S)

Designwall™ 4000 Flat Wall Panels: 2" thick, ISO core, 36" module width.

Wind Load (psf)	Single Span		Double Span		Triple Span	
	Maximum Span	Limiting Factor	Maximum Span	Limiting Factor	Maximum Span	Limiting Factor
20	11' -8"	(D)	13' -6"	(N)	10' -0"	(L)
25	10' -6"	(D)	10' -11"	(N)	10' -0"	(L)
30	9' -8"	(D)	9' -3"	(N)	10' -0"	(L)
35	8' -11"	(D)	8' -0"	(N)	8' -8"	(N)
40	8' -4"	(D)	7' -1"	(N)	7' -7"	(N)
45	7' -10"	(D)	6' -4"	(N)	6' -9"	(N)
50	7' -5"	(D)	5' -9"	(N)	6' -1"	(N)
55	7' -0"	(D)	5' -4"	(N)	5' -7"	(N)
60	6' -6"	(S)	4' -11"	(N)	5' -2"	(N)
65	6' -0"	(S)	4' -7"	(N)	4' -9"	(N)
70	5' -7"	(S)	4' -3"	(N)	4' -5"	(N)
75	5' -3"	(S)	4' -0"	(N)	4' -2"	(N)
80	4' -11"	(S)	3' -9"	(N)	3' -11"	(N)
85	4' -7"	(S)	3' -7"	(N)	3' -8"	(N)
90	4' -4"	(S)	3' -5"	(N)	3' -6"	(N)

Notes:

1. Wind Load charts based on 1/180 deflection limit.
2. Exterior face 22 gauge steel, Interior face 24 gauge steel.
3. Spans may be governed by other factors including deflection due to temperature differential, unequal span conditions, and fastener pullout limits in lighter gauge supports. Consult Kingspan for specific project applications.
4. Limiting factor: (N) Negative Load / Connection Strength, (S) Core Shear, (B) Flexural Bending, (D) Deflection, (L) Maximum Fabrication Length.
5. Values based on single #14 fastener into 3/16" steel thickness to achieve full spanning capacity of panel. For lighter gauge supports spans may be further limited by fastener pullout. See Fastener Section following these Wind Load charts.

Designwall™ 1000 Wall Panels: 1 1/8" thick, EPS core, 24" and 30" module width.

Wind Load (psf)	Single Span		Double Span		Triple Span	
	Maximum Span	Limiting Factor	Maximum Span	Limiting Factor	Maximum Span	Limiting Factor
20	6' -6"	(D)	7' -1"	(D)	7' -1"	(D)
25	5' -8"	(D)	6' -0"	(D)	6' -1"	(D)
30	5' -0"	(D)	5' -3"	(D)	5' -3"	(D)
35	4' -6"	(D)	4' -8"	(D)	4' -8"	(D)
40	4' -1"	(D)	4' -2"	(D)	4' -2"	(D)
45	3' -8"	(D)	3' -9"	(D)	3' -10"	(D)
50	3' -5"	(D)	3' -5"	(D)	3' -6"	(S)
55	3' -2"	(D)	3' -2"	(D)	3' -2"	(S)
60	2' -11"	(D)	2' -11"	(D)	2' -11"	(S)
65	2' -9"	(D)	2' -9"	(D)	2' -9"	(S)
70	2' -7"	(D)	2' -7"	(D)	2' -7"	(S)
75	2' -5"	(D)	2' -5"	(D)	2' -5"	(S)
80	2' -3"	(D)	2' -3"	(D)	2' -3"	(S)
85	2' -2"	(D)	2' -2"	(D)	2' -2"	(S)
90	2' -0"	(D)	2' -0"	(D)	2' -0"	(S)

Designwall™ 3000 Wall Panels: 1 1/4" thick, Paper core, module width to 36".

Wind Load (psf)	Single Span		Double Span		Triple Span	
	Maximum Span	Limiting Factor	Maximum Span	Limiting Factor	Maximum Span	Limiting Factor
20	9' -7"	(D)	10' -8"	(B)	10' -0"	(L)
25	8' -10"	(D)	9' -7"	(B)	10' -0"	(L)
30	8' -4"	(D)	8' -9"	(B)	9' -8"	(B)
35	7' -10"	(D)	8' -1"	(B)	9' -0"	(B)
40	7' -5"	(B)	7' -7"	(B)	8' -5"	(B)
45	7' -0"	(B)	7' -2"	(B)	7' -8"	(S)
50	6' -8"	(B)	6' -8"	(S)	6' -10"	(S)
55	6' -4"	(B)	6' -1"	(S)	6' -3"	(S)
60	6' -1"	(B)	5' -7"	(S)	5' -9"	(S)
65	5' -10"	(B)	5' -2"	(S)	5' -4"	(S)
70	5' -8"	(B)	4' -9"	(S)	4' -11"	(S)
75	5' -5"	(B)	4' -6"	(S)	4' -7"	(S)
80	5' -2"	(S)	4' -2"	(S)	4' -4"	(S)
85	4' -10"	(S)	4' -0"	(S)	4' -1"	(S)
90	4' -7"	(S)	3' -9"	(S)	3' -10"	(S)

Notes:

1. Wind Load charts based on 1/180 deflection limit.
2. Exterior face 22 gauge steel, Interior face 24 gauge steel.
3. Spans may be governed by other factors including deflection due to temperature differential, unequal span conditions, and fastener pullout limits in lighter gauge supports. Consult Kingspan for specific project applications.
4. Limiting factor: (N) Negative Load / Connection Strength, (S) Core Shear, (B) Flexural Bending, (D) Deflection, (L) Maximum Fabrication Length.
5. Values based on single #14 fastener into 3/16" steel thickness to achieve full spanning capacity of panel. For lighter gauge supports spans may be further limited by fastener pullout. See Fastener Section following these Wind Load charts.

Fastener Design Loads

Design guide for fastener pullout check

Tributary area: tributary width x tributary height.

Tributary area normally equates to span x panel width. In the example right, the tributary area is 3'-0" x 4'-0" = 12 sq ft.

Apply design wind load to the tributary area for example, 25 psf wind load x 12 sq ft = 300 lb. Therefore, design load per fastening point is 300 lb.

Compare the load per fastening point to the allowable values in the tables below. If the load on a fastening point is less than the allowable value the design is OK.

To complete the example above:

Design load on fastener at 25 psf wind is 300 lb.

Consider 16 gauge supports:

- One screw in 16 gauge = 238 lb. - **Allowable**
- 300 lb. exceeds 238 lb. - **Allowable (no good)**
- Two screws in 16 gauge = 357 lb. - **Allowable**
- 300 lb. < 357 lb. - **OK**

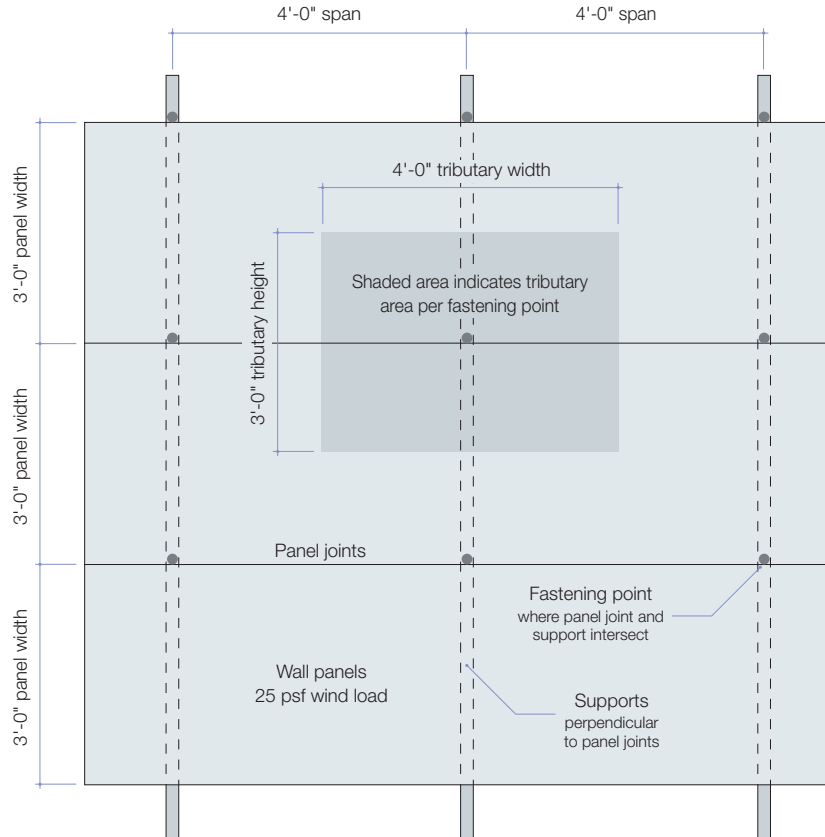
Consider 14 gauge supports:

- One screw in 14 gauge = 353 lb. - **Allowable**
- 300 lb. < 353 lb. - **OK**

Possible solutions to example case of light gauge supports 4'-0" o.c. at 25 psf wind load using 36" wide panels include the following:

- 16 gauge supports using two screws per fastening point.
- 14 gauge supports using one screw per fastening point.

Consult Kingspan Benchmark for project specific formal structural analysis or certified structural calculations.



#14 Structural Fastener Type “B” (Part # 8300.2100)

Allowable Design Values For Screws		
Support Steel Thickness	Screws Per Fastening Point	
	One Screw (lbs)	Two Screws (lbs)
1/4"	1437	2156
3/16"	954	1431
1/8"	580	870
12 Ga.	440	660

* Above values are based on safety factor of "3.0".

#14 Light Gauge Fastener Type “A” (Part # 8300.1100)

Allowable Design Values For Screws		
Support Steel Thickness	Screws Per Fastening Point	
	One Screw (lbs)	Two Screws (lbs)
14 Ga.	353	530
16 Ga.	238	357
18 Ga.	177	266
20 Ga.	139	209

* Above values are based on safety factor of "3.0".