



# Wind Load Report

## 1. Site & Building Data

Roof Type: Gable  
Wind Speed (ult): 115 mph  
Exposure Category: B  
Enclosure Class: Enclosed  
Building Width (W): 48 ft.  
Building Length (L): 80 ft.  
Eave Height ( $h_e$ ): 16 ft.  
Foundation Height ( $h_f$ ): 0 ft.  
Roof Pitch: 4 /12  
Eave Overhang ( $OH_e$ ): 1 ft.  
Gable Overhang ( $OH_g$ ): 1 ft.

## 2. Parameters & Coefficients

Topographic Factor ( $K_{zt}$ ): 1.0  
Directionality Factor ( $K_d$ ): .85  
Roof Angle ( $\theta$ ): 18.43 deg.  
Mean Roof Height ( $h$ ): 20.00 ft.  
Ridge Height ( $h_r$ ): 24.00 ft.  
Pos. Internal Pressure (+GCpi): +0.18  
Neg. Internal Pressure (-GCpi): -0.18  
Velocity Pressure Exp. Coeff. ( $K_h$ ): 0.70 @  $z=h$   
Velocity Pressure ( $q_h$ ): 20.16 psf  
End Zone Width (a): 3.00 ft.  
Zone 2/2E Dist.: 24.00 ft.

## 3. Design Assumptions and Notes

Code Standard: ASCE 7-10  
Geometry: Regular-Shaped Bldg.  
Height Class: Low-Rise Building  
Notes:

## 4. Design Loads

Top Chord Dead Load: 5 psf  
Bottom Chord Dead Load: 5 psf  
Truss/Rafter Spacing: 48 in. o/c

## 4. Design Wind Pressures: MWFRS Envelope Procedure

Load Case A: Transverse Direction			
Surface	GCpf	Design Pressure (psf)	
		(w/ +GCpi)	(w/ -GCpi)
1	0.52	6.78	14.04
2	-0.69	-17.54	-10.28
3	-0.47	-13.08	-5.82
4	-0.42	-12.00	-4.75
1E	0.78	12.10	19.36
2E	-1.07	-25.20	-17.94
3E	-0.67	-17.20	-9.95
4E	-0.62	-16.09	-8.83
2OH	-0.69	-13.91	
2EOH	-1.07	-21.57	
3OH	-0.47	-9.45	
3EOH	-0.67	-13.57	
2OH+W	-0.69/-0.7	-28.02	
2EOH+W	-1.07/-0.7	-35.69	



- a) (+) and (-) signs signify wind pressures acting toward & away from surfaces.  
b) External Pressure Coefficients linearly interpolated from Fig. 28.4-1 ASCE 7-10.  
c) Design building for all wind directions, 4 load patterns per load case.  
d) Total horizontal shear shall not be less than that by neglecting roof wind forces.  
e) Min. wind load for enclosed or partially enclosed bldg.: 16 psf wall, 8 psf roof.  
f) Design pressures are for strength design, multiply by 0.6 for ASD.

Subject Wind Loads	Customer	Location	Job No. 2025D74
Engr. Engineer	Company Name 123 Street City, State 12345 ph. (888) 777-5555 www.website.com		Rev. -
Date 3/28/2025			Page 1



This report may not be  
copied, reproduced or  
distributed without the  
written consent of  
Company Name

Copyright © 2025

### Load Case B: Longitudinal Direction

Surface	GCpf	Design Pressure (psf)	
		(w/ +GCpi)	(w/ -GCpi)
1	-0.45	-12.70	-5.44
2	-0.69	-17.54	-10.28
3	-0.37	-11.09	-3.83
4	-0.45	-12.70	-5.44
5	0.40	4.44	11.69
6	-0.29	-9.48	-2.22
1E	-0.48	-13.31	-6.05
2E	-1.07	-25.20	-17.94
3E	-0.53	-14.31	-7.06
4E	-0.48	-13.31	-6.05
5E	0.61	8.67	15.93
6E	-0.43	-12.30	-5.04
2OH	-0.69	-13.91	
2EOH	-1.07	-21.57	
3OH	-0.37	-7.46	
3EOH	-0.53	-10.69	
2EOH+W	-1.07/-0.7	-35.69	
3EOH+W	-0.53/-0.7	-24.80	



- a) (+) and (-) signs signify wind pressures acting toward & away from surfaces.  
b) External Pressure Coefficients linearly interpolated from Fig. 28.4-1 ASCE 7-10.  
c) Design building for all wind directions, 4 load patterns per load case.  
d) Total horizontal shear shall not be less than that by neglecting roof wind forces.  
e) Min. wind load for enclosed or partially enclosed bldg.: 16 psf wall, 8 psf roof.  
f) Design pressures are for strength design, multiply by 0.6 for ASD.


### Torsional Load Cases

Surface	Load Case	GCpf	Design Pressure (psf)	
			(w/ +GCpi)	(w/ -GCpi)
1T	A	-	1.70	3.51
2T	A	-	-4.39	-2.57
3T	A	-	-3.27	-1.45
4T	A	-	-3.00	-1.19
5T	B	-	1.11	2.92
6T	B	-	-2.37	-0.55



- a) (+) and (-) signs signify wind pressures acting toward & away from surfaces.  
b) Pressures designated with a "T" are 25% of full design wind pressures.  
c) Torsional loading shall apply to all 8 load patterns using the figures shown.  
d) Design pressures are for strength design, multiply by 0.6 for ASD.  
e) Torsional Design Exceptions: One story bldg. with  $h \leq 30$  ft,  
Two stories or less framed with light frame construction,  
Two stories or less with flexible diaphragms.

Subject <b>Wind Loads</b>	Customer	Location	Job No. <b>2025D74</b>
Engr. <b>Engineer</b>	<b>Company Name</b> 123 Street City, State 12345 ph. (888) 777-5555    www.website.com		Rev. -
Date <b>3/28/2025</b>			Page <b>2</b>

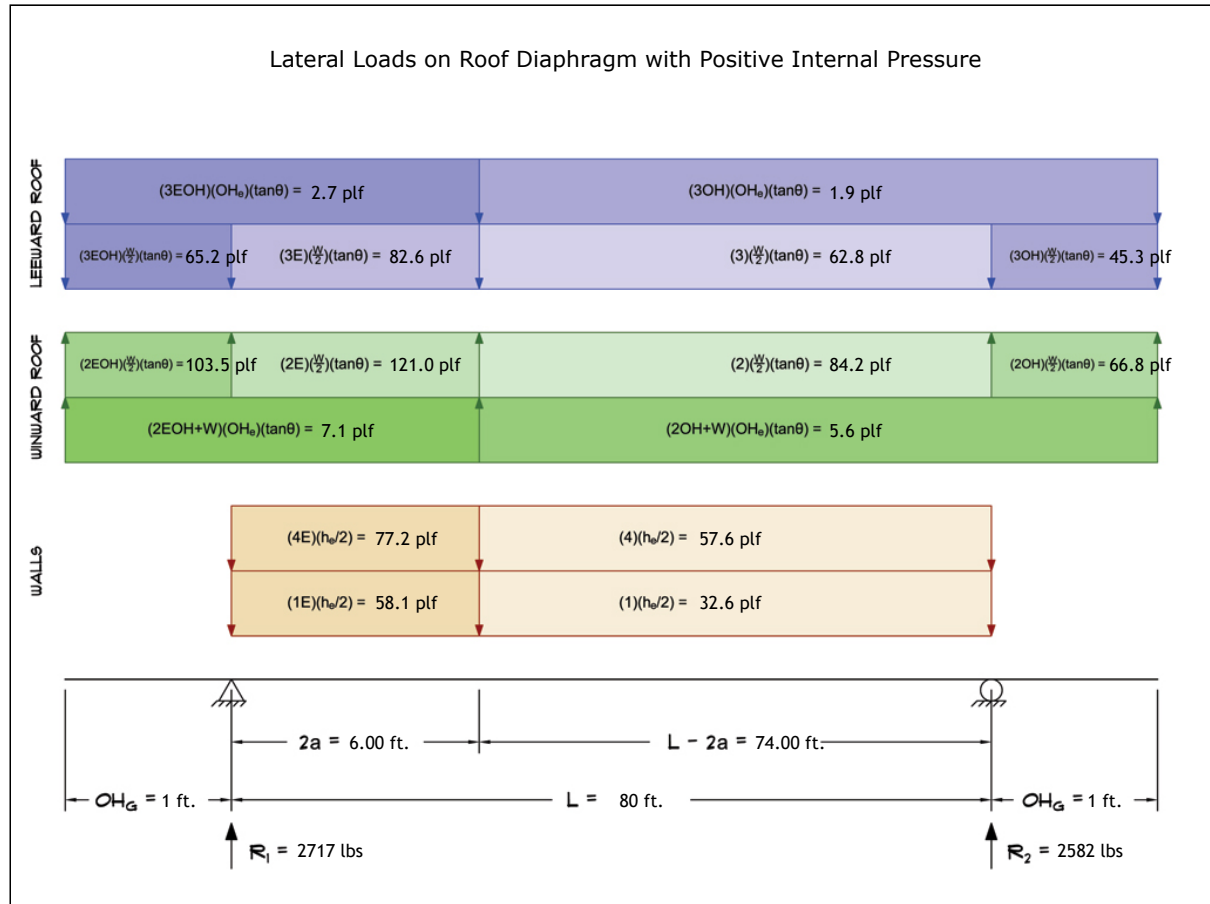


Copyright © 2025

This report may not be copied, reproduced or distributed without the written consent of Company Name

## 5. Wind Load Calculations

### 1.) Lateral Loads - Transverse Direction:



- a) (-) signs signify wind lateral forces acting opposite to the direction of the arrows shown.  
b) Strength design values multiplied by 0.6 to obtain ASD values.

Wind Base Shear (ASD)						
Load Case A: Transverse Direction						
Load Case	Walls (lbs)	Roof (lbs)	Roof Overhangs (lbs)	Total Lateral Load (lbs)	R <sub>1</sub> (lbs)	R <sub>2</sub> (lbs)
Positive Internal Pressure	7485	-1816	-369	5299	2717	2582
Negative Internal Pressure	7485	-1816	-369	5299	2717	2582
Roof Pressure = 0	7485	0	0	7485	3868	3617
Min. Pressures (8 psf, 16 psf)	6144	3072	208	9424	4712	4712

- a) Bottom half of wall neglected in tributary area calculations.  
b) Strength design values multiplied by 0.6 to obtain ASD values.

Subject	Wind Loads	Customer	Location	Job No.	2025D74	
Engr.	Engineer	<div>Company Name</div> <div>123 Street City, State 12345</div> <div>ph. (888) 777-5555    www.website.com</div>			Rev.	-
Date	3/28/2025				Page	3

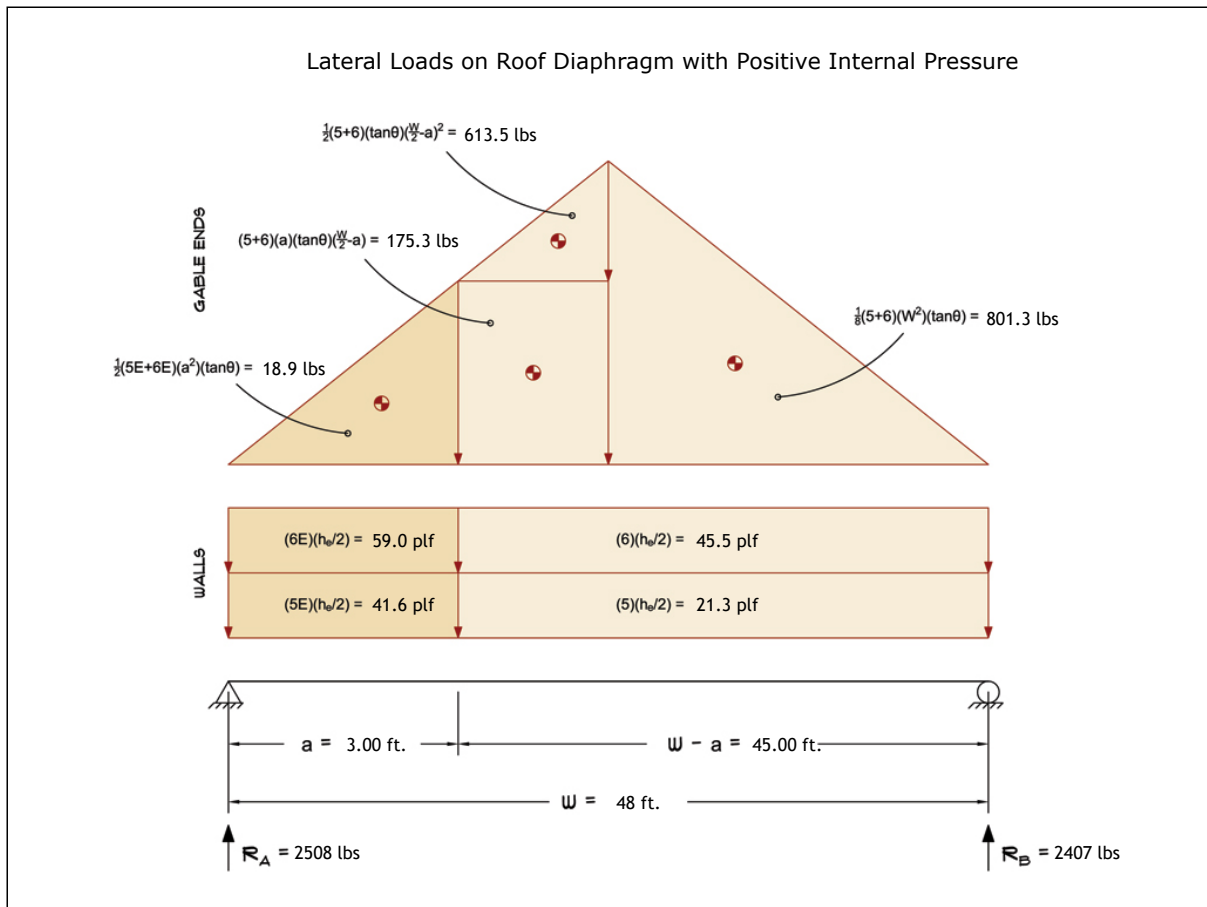
STRUCTURAL ENGINEERS

COMPANY LOGO

This report may not be copied, reproduced or distributed without the written consent of Company Name

Copyright © 2025

## 2.) Lateral Loads - Longitudinal Direction:



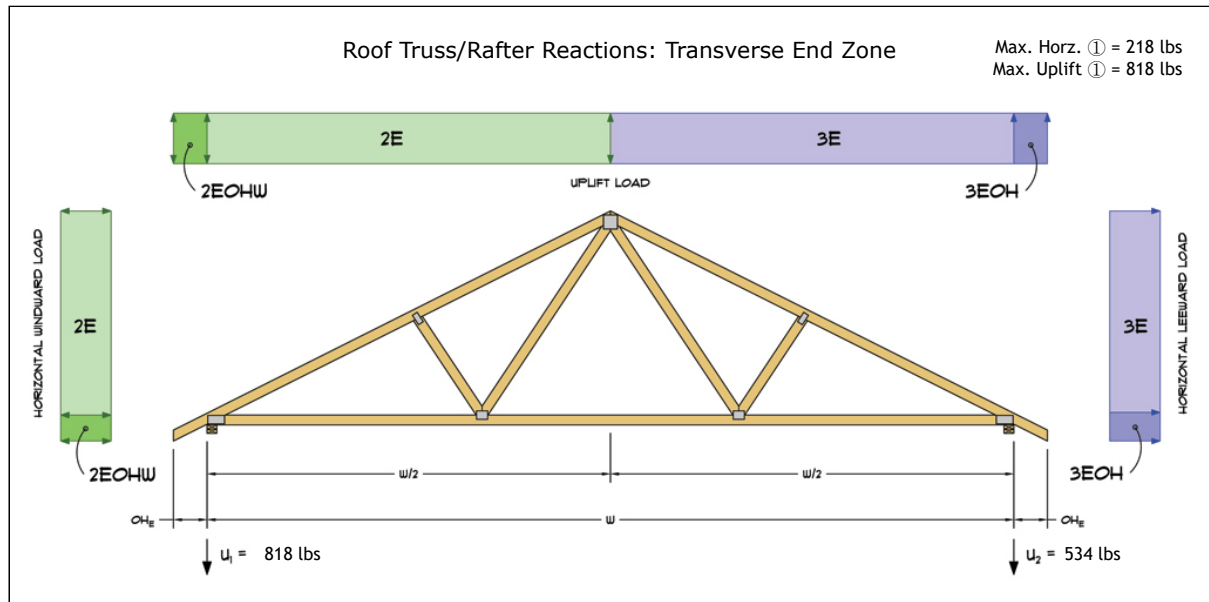
- a) (-) signs signify wind lateral forces acting opposite to the direction of the arrows shown.  
b) Strength design values multiplied by 0.6 to obtain ASD values.  
c) Where the length of building (L) exceeds 4X the mean roof height (h), wind drag forces should additionally be considered.

Wind Base Shear (ASD)						
Load Case B: Longitudinal Direction						
Load Case	Walls (lbs)	Gable Ends (lbs)	Roof (lbs)	Total Lateral Load (lbs)	R <sub>A</sub> (lbs)	R <sub>B</sub> (lbs)
Positive Internal Pressure	3307	1609	0	4916	2508	2407
Negative Internal Pressure	3307	1609	0	4916	2508	2407
Roof Pressure = 0	3307	1609	0	4916	2508	2407
Min. Pressures (8 psf, 16 psf)	3686	1843	0	5530	2765	2765

- a) Bottom half of wall neglected in tributary area calculations.  
b) Strength design values multiplied by 0.6 to obtain ASD values.

Subject	Wind Loads	Customer	Location	Job No.	2025D74	
Engr.	Engineer	<div>Company Name</div> <div>123 Street City, State 12345</div> <div>ph. (888) 777-5555    www.website.com</div> <div><div>STRUCTURAL ENGINEERS</div><div>COMPANY LOGO</div></div> <div>This report may not be copied, reproduced or distributed without the written consent of Company Name</div>			Rev.	-
Date	3/28/2025				Page	4
Copyright © 2025						

### 3.) Roof Truss Reactions:



- a) Strength design values multiplied by 0.6 to obtain ASD values.  
b) Windward loads may be positive or negative depending on pitch of roof.

Roof Truss/Rafter Reactions (ASD)					
w/ Positive Internal Pressure					
Load Case	Horizontal Load (lbs)	Gross Uplift (lbs)	Net Uplift (lbs)	$U_1$ (lbs)	$U_2$ (lbs)
Transverse Int. Zone	101	1853	645	410	235
Transverse End Zone	171	2561	1352	818	534
Longitudinal Int. Zone	129	1700	492	347	145
Longitudinal End Zone	218	2354	1145	743	402

- a) Gross Uplift calculations do not include any counteracting roof dead loads.  
b) Net Uplift calculations include counteracting roof dead loads multiplied by 0.6 per load case (7) ASCE 7-10.  
c) Strength design values multiplied by 0.6 to obtain ASD values for wind loads.  
d) Loads based on truss spacing calculated at 48" o/c.  
e) Negative values for horizontal load indicate load acting in windward direction (transverse load cases).  
f) Negative values for uplift indicate net downward force (zero uplift).

\*Disclaimer: The calculations produced herein are for initial design and estimating purposes only. The calculations and drawings presented do not constitute a fully engineered design. All of the potential load cases required to fully design an actual structure may not be provided by this calculator. For the design of an actual structure, a registered and licensed professional should be consulted as per IRC 2012 Sec. R802.10.2 and designed according to the minimum requirements of ASCE 7-10. The wind load calculations provided by this online tool are for educational and illustrative purposes only. Medeek Design assumes no liability or loss for any designs presented and does not guarantee fitness for use.

Subject	Wind Loads	Customer	Location	Job No.	2025D74	
Engr.	Engineer	<div>Company Name</div> <div>123 Street City, State 12345</div> <div>ph. (888) 777-5555    www.website.com</div>			Rev.	-
Date	3/28/2025				Page	5

STRUCTURAL ENGINEERS

COMPANY LOGO

This report may not be copied, reproduced or distributed without the written consent of Company Name

Copyright © 2025



This report may not be copied, reproduced or distributed without the written consent of Company Name

Copyright © 2025