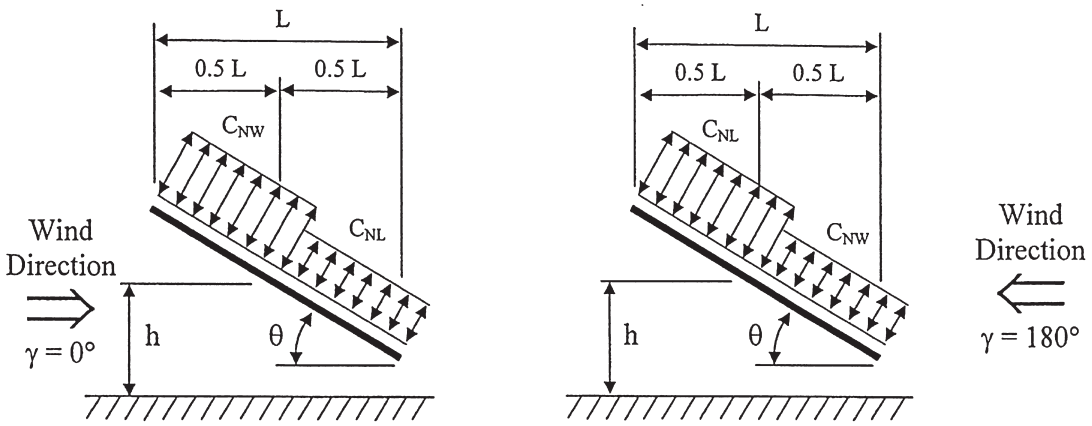
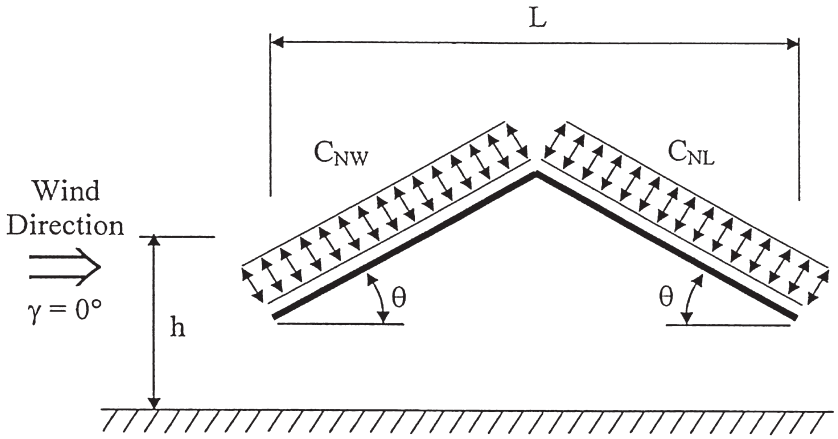
Main Wind Force Resisting System – Part 1		$0.25 \leq h/L \leq 1.0$
Figure 27.4-4	Net Pressure Coefficient, C_N	**Monoslope Free Roofs**
Open Buildings		$\theta \leq 45°, \gamma = 0°, 180°$



Roof Angle θ	Load Case	Wind Direction, $\gamma = 0^o$				Wind Direction, $\gamma = 180^o$			
		Clear Wind Flow		Obstructed Wind Flow		Clear Wind Flow		Obstructed Wind Flow	
		C_{NW}	C_{NL}	C_{NW}	C_{NL}	C_{NW}	C_{NL}	C_{NW}	C_{NL}
0^o	A	1.2	0.3	-0.5	-1.2	1.2	0.3	-0.5	-1.2
	B	-1.1	-0.1	-1.1	-0.6	-1.1	-0.1	-1.1	-0.6
7.5^o	A	-0.6	-1	-1	-1.5	0.9	1.5	-0.2	-1.2
	B	-1.4	0	-1.7	-0.8	1.6	0.3	0.8	-0.3
15^o	A	-0.9	-1.3	-1.1	-1.5	1.3	1.6	0.4	-1.1
	B	-1.9	0	-2.1	-0.6	1.8	0.6	1.2	-0.3
22.5^o	A	-1.5	-1.6	-1.5	-1.7	1.7	1.8	0.5	-1
	B	-2.4	-0.3	-2.3	-0.9	2.2	0.7	1.3	0
30^o	A	-1.8	-1.8	-1.5	-1.8	2.1	2.1	0.6	-1
	B	-2.5	-0.5	-2.3	-1.1	2.6	1	1.6	0.1
37.5^o	A	-1.8	-1.8	-1.5	-1.8	2.1	2.2	0.7	-0.9
	B	-2.4	-0.6	-2.2	-1.1	2.7	1.1	1.9	0.3
45^o	A	-1.6	-1.8	-1.3	-1.8	2.2	2.5	0.8	-0.9
	B	-2.3	-0.7	-1.9	-1.2	2.6	1.4	2.1	0.4

Notes:
1. C_{NW} and C_{NL} denote net pressures (contributions from top and bottom surfaces) for windward and leeward half of roof surfaces, respectively.
2. Clear wind flow denotes relatively unobstructed wind flow with blockage less than or equal to 50%. Obstructed wind flow denotes objects below roof inhibiting wind flow (>50% blockage).
3. For values of θ between 7.5° and 45°, linear interpolation is permitted. For values of θ less than 7.5°, use load coefficients for 0°.
4. Plus and minus signs signify pressures acting towards and away from the top roof surface, respectively.
5. All load cases shown for each roof angle shall be investigated.
6. Notation:
   L : horizontal dimension of roof, measured in the along wind direction, ft. (m)
   h : mean roof height, ft. (m)
   γ : direction of wind, degrees
   θ : angle of plane of roof from horizontal, degrees

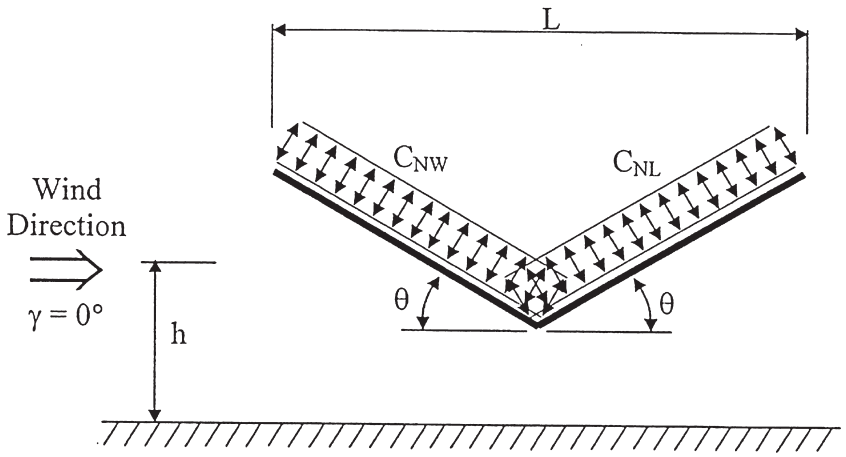
Main Wind Force Resisting System – Part 1		0.25 ≤ h/L ≤ 1.0
Figure 27.4-5	Net Pressure Coefficient, C_N	**Pitched Free Roofs** $\theta \le 45°, \gamma = 0°, 180°$
Open Buildings		



Roof Angle, θ	Load Case	Wind Direction, γ = 0°, 180°			
		Clear Wind Flow		Obstructed Wind Flow	
		C_{NW}	C_{NL}	C_{NW}	C_{NL}
7.5°	A	1.1	-0.3	-1.6	-1
	B	0.2	-1.2	-0.9	-1.7
15°	A	1.1	-0.4	-1.2	-1
	B	0.1	-1.1	-0.6	-1.6
22.5°	A	1.1	0.1	-1.2	-1.2
	B	-0.1	-0.8	-0.8	-1.7
30°	A	1.3	0.3	-0.7	-0.7
	B	-0.1	-0.9	-0.2	-1.1
37.5°	A	1.3	0.6	-0.6	-0.6
	B	-0.2	-0.6	-0.3	-0.9
45°	A	1.1	0.9	-0.5	-0.5
	B	-0.3	-0.5	-0.3	-0.7

Notes:
1. C_{NW} and C_{NL} denote net pressures (contributions from top and bottom surfaces) for windward and leeward half of roof surfaces, respectively.
2. Clear wind flow denotes relatively unobstructed wind flow with blockage less than or equal to 50%. Obstructed wind flow denotes objects below roof inhibiting wind flow (>50% blockage).
3. For values of θ between 7.5° and 45°, linear interpolation is permitted. For values of θ less than 7.5°, use monoslope roof load coefficients.
4. Plus and minus signs signify pressures acting towards and away from the top roof surface, respectively.
5. All load cases shown for each roof angle shall be investigated.
6. Notation:
   L : horizontal dimension of roof, measured in the along wind direction, ft. (m)
   h : mean roof height, ft. (m)
   γ : direction of wind, degrees
   θ : angle of plane of roof from horizontal, degrees

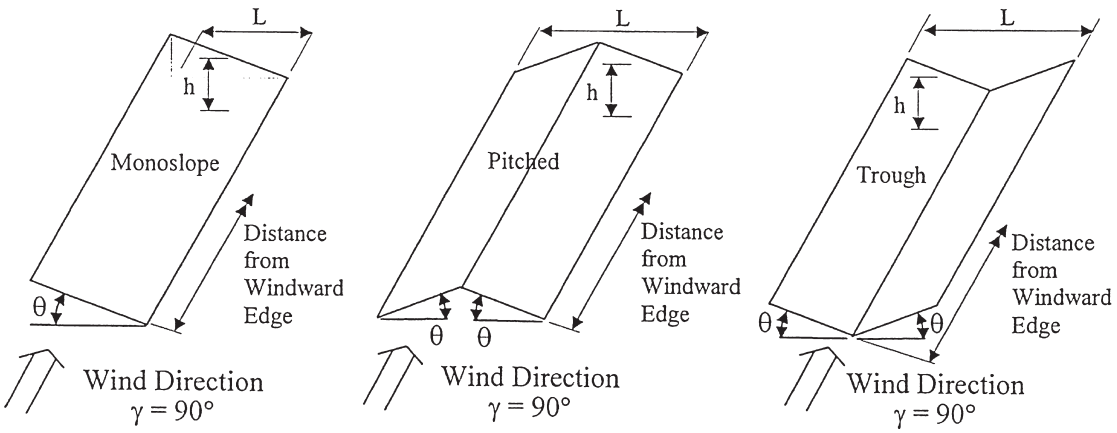
Main Wind Force Resisting System		0.25 ≤ h/L ≤ 1.0
Figure 27.4-6	Net Pressure Coefficient, C_N	**Troughed Free Roofs**
Open Buildings		**θ ≤ 45°, γ = 0°, 180°**



Roof Angle θ	Load Case	Wind Direction, γ = 0°, 180°			
		Clear Wind Flow		Obstructed Wind Flow	
		C_{NW}	C_{NL}	C_{NW}	C_{NL}
7.5°	A	-1.1	0.3	-1.6	-0.5
	B	-0.2	1.2	-0.9	-0.8
15°	A	-1.1	0.4	-1.2	-0.5
	B	0.1	1.1	-0.6	-0.8
22.5°	A	-1.1	-0.1	-1.2	-0.6
	B	-0.1	0.8	-0.8	-0.8
30°	A	-1.3	-0.3	-1.4	-0.4
	B	-0.1	0.9	-0.2	-0.5
37.5°	A	-1.3	-0.6	-1.4	-0.3
	B	0.2	0.6	-0.3	-0.4
45°	A	-1.1	-0.9	-1.2	-0.3
	B	0.3	0.5	-0.3	-0.4

Notes:
1. C_{NW} and C_{NL} denote net pressures (contributions from top and bottom surfaces) for windward and leeward half of roof surfaces, respectively.
2. Clear wind flow denotes relatively unobstructed wind flow with blockage less than or equal to 50%. Obstructed wind flow denotes objects below roof inhibiting wind flow (>50% blockage).
3. For values of θ between 7.5° and 45°, linear interpolation is permitted. For values of θ less than 7.5°, use monoslope roof load coefficients.
4. Plus and minus signs signify pressures acting towards and away from the top roof surface, respectively.
5. All load cases shown for each roof angle shall be investigated.
6. Notation:
   L : horizontal dimension of roof, measured in the along wind direction, ft. (m)
   h : mean roof height, ft. (m)
   γ : direction of wind, degrees
   θ : angle of plane of roof from horizontal, degrees

Main Wind Force Resisting System – Part 1		0.25 ≤ h/L ≤ 1.0
Figure 27.4-7	Net Pressure Coefficient, C_N	Free Roofs
Open Buildings		θ ≤ 45°, γ = 90°, 270°



Horizontal Distance from Windward Edge	Roof Angle θ	Load Case	Clear Wind Flow	Obstructed Wind Flow
			C_N	C_N
≤ h	All Shapes	A	-0.8	-1.2
	θ ≤ 45°	B	0.8	0.5
> h, ≤ 2h	All Shapes	A	-0.6	-0.9
	θ ≤ 45°	B	0.5	0.5
> 2h	All Shapes	A	-0.3	-0.6
	θ ≤ 45°	B	0.3	0.3

Notes:
1. C_N denotes net pressures (contributions from top and bottom surfaces).
2. Clear wind flow denotes relatively unobstructed wind flow with blockage less than or equal to 50%. Obstructed wind flow denotes objects below roof inhibiting wind flow (>50% blockage).
3. Plus and minus signs signify pressures acting towards and away from the top roof surface, respectively.
4. All load cases shown for each roof angle shall be investigated.
5. For monoslope roofs with theta less than 5 degrees, Cn values shown apply also for cases where gamma = 0 degrees and 0.05 less than or equal to h/L less than or equal to 0.25. See Figure 27.4-4 for other h/L values.
6. Notation:
   - L : horizontal dimension of roof, measured in the along wind direction, ft. (m)
   - h : mean roof height, ft. (m). See Figures 27.4-4, 27.4-5 or 27.4-6 for a graphical depiction of this dimension.
   - γ : direction of wind, degrees
   - θ : angle of plane of roof from horizontal, degrees