



Snow Load Report

1. Roof and Building Data

Ground Snow Load (Pg): 86.0 psf
Roof Pitch: 6 /12
Risk Category: II
Eave-to-Ridge (W): 13 ft.
Terrain Category: C
Exposure: Sheltered
Thermal Factor (Ct): 1.20
Roof Surface: Asphalt Shingles
Roof System: Common Truss
Spacing: 24 in. o/c
Overhang: 12 in.

2. Design Loads

Top Chord Dead Load: 7 psf
Bottom Chord Dead Load: 10 psf
SF (Slope Factor) = $1/\text{Cosine}(\Phi) = 1.12$ (Dead loads specified on a projected horizontal basis take into account the effect of the pitch via a slope factor.)
Adj. TCDL (TCDL x SF): 7.8 psf

3. Design Assumptions

Code Standard: ASCE 7-10
Number of Plies: 1 PLY
Bottom Chord Pitch: 0 /12

4. Snow Load Calculations

Calculate flat roof snow load p_f using the following equation:

$$p_f = 0.7C_eC_tI_s p_g$$

where:

p_f = Flat Roof Snow Load in psf
 $C_e = 1.10$ = Exposure Factor, as determined by ASCE 7-10 Table 7-2 (Terrain Cat. C, Exp. Sheltered)
 $C_t = 1.20$ = Thermal Factor, as determined by ASCE 7-10 Table 7-3
 $I_s = 1.00$ = Importance Factor, as determined by ASCE 7-10 Table 1.5-2 (Risk Cat. II)
 $p_g = 86.0$ psf = Ground Snow Load in psf

$$p_f = 0.7C_eC_tI_s p_g = 0.7(1.10)(1.20)(1.00)(86.0) = 79.5 \text{ psf}$$

Subject Snow Loads	Customer	Location	Job No. 2025A364
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$$p_{\text{windward}} = 0.3p_s = (0.3)(79.5) = 23.8 \text{ psf}$$

$$p_{\text{leeward}} = p_s = 79.5 \text{ psf}$$

$$\gamma = 0.13(86.0) + 14 = 25.18 \text{ pcf}$$

$$h_d = .43\sqrt[3]{20}\sqrt[4]{86.0 + 10} - 1.5 = 2.15 \text{ ft. } [l_u = 20 \text{ ft.}]$$

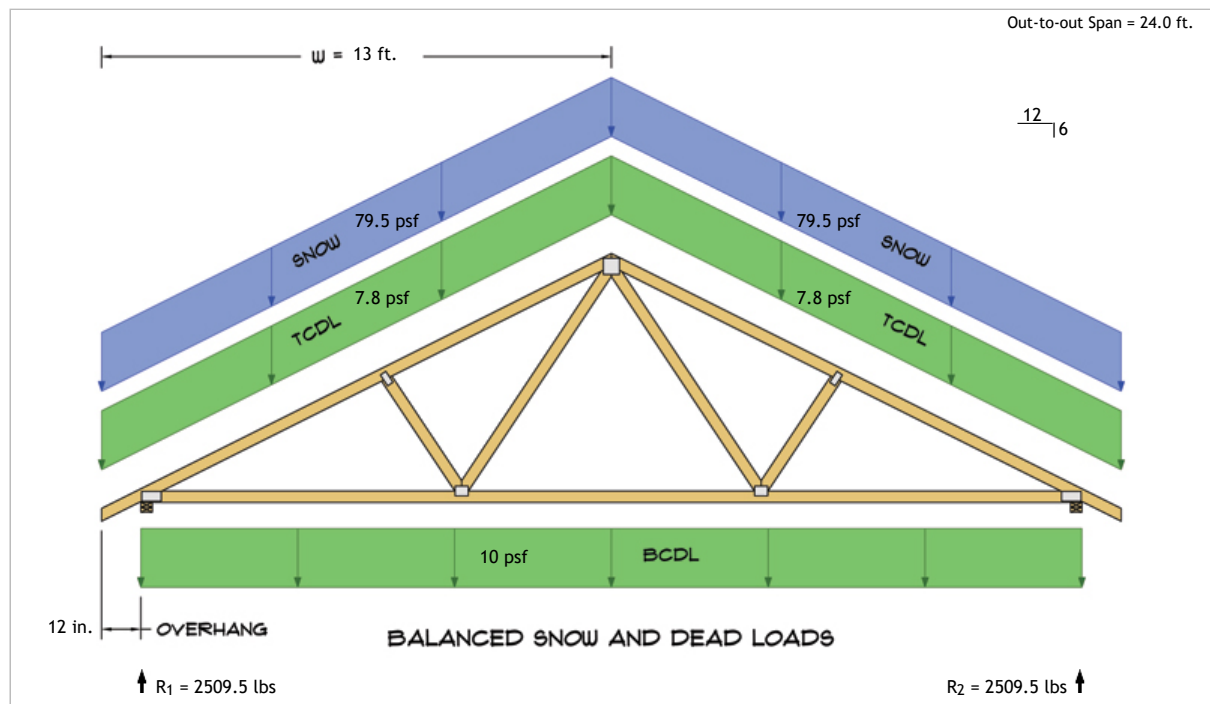
$$l_d = \frac{8}{3} \times 2.15 \times \sqrt{12/6} = 8.12 \text{ ft.}$$

$$p_d = \frac{2.15 \times 25.18}{\sqrt{12/6}} = 38.3 \text{ psf}$$

On warm roofs apply a distributed 2p_f snow load on all overhanging portions as per ASCE 7-10 section 7.4.5.

No other loads except dead loads shall be present on the roof when this uniformly distributed load is applied.

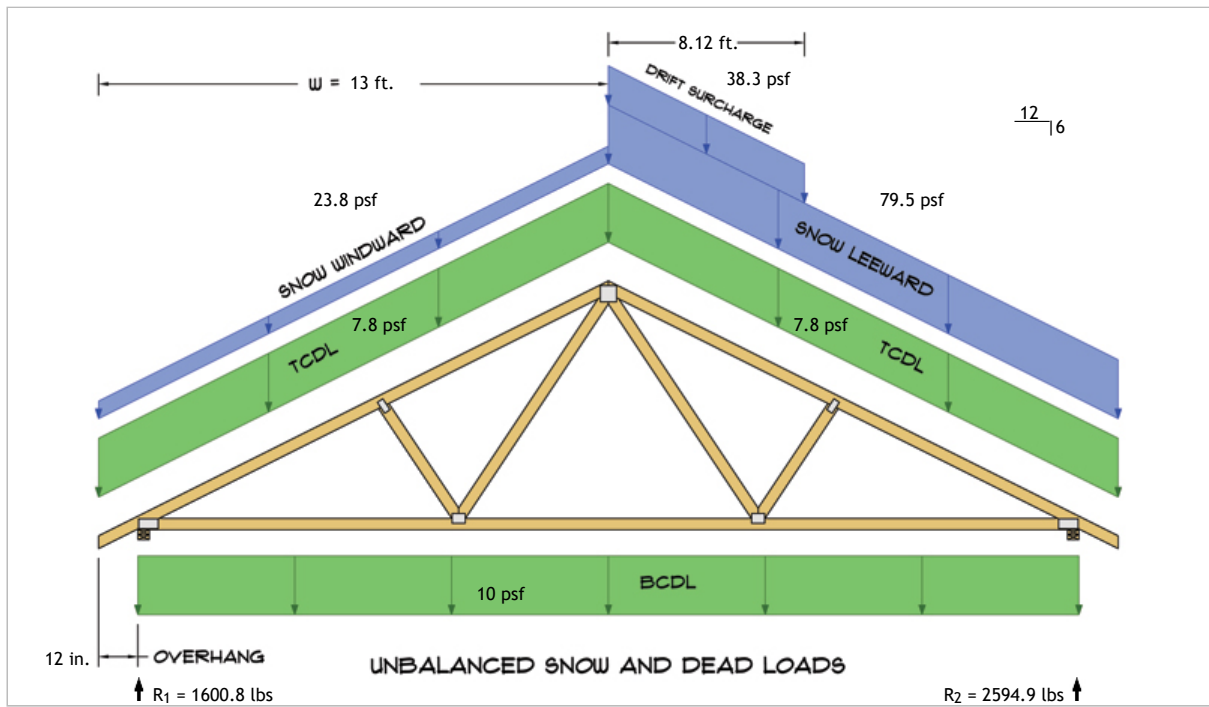
$$2p_f = (2)(79.5) = 158.9 \text{ psf}$$



$$R_1 = D + S = 443.5 \text{ lbs} + 2066.1 \text{ lbs}$$

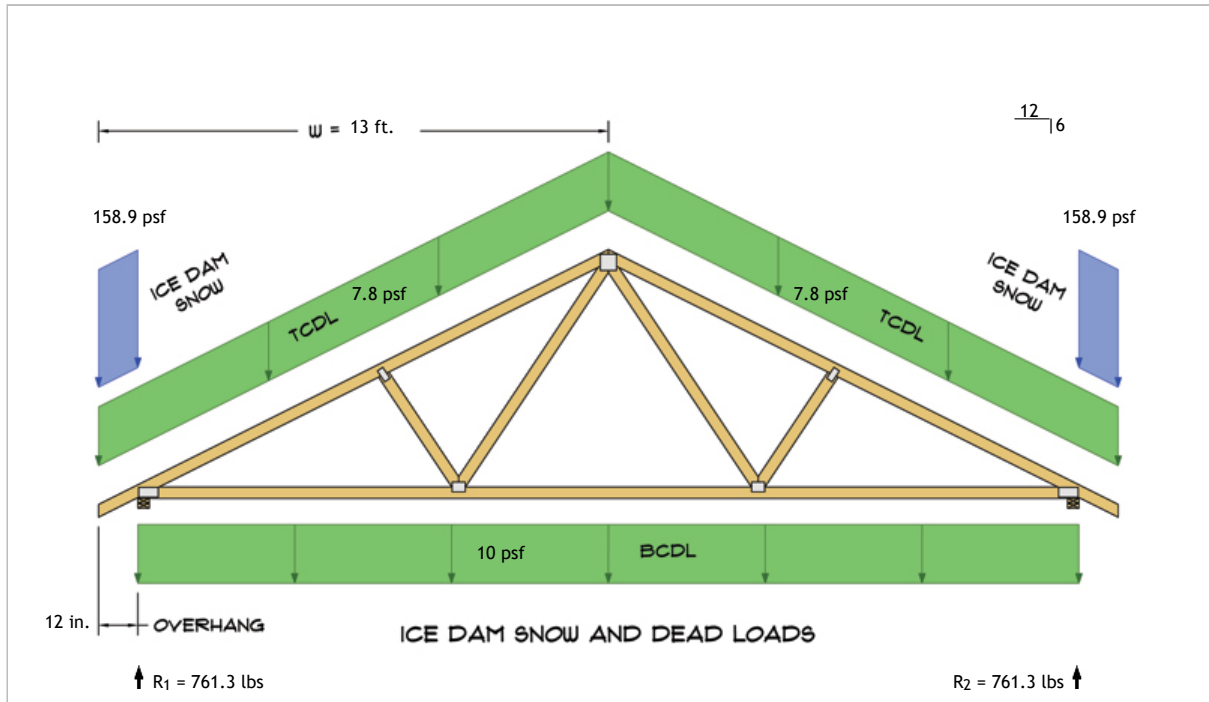
$$R_2 = D + S = 443.5 \text{ lbs} + 2066.1 \text{ lbs}$$

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$$R_1 = D + S = 443.5 \text{ lbs} + 1157.3 \text{ lbs}$$

$$R_2 = D + S = 443.5 \text{ lbs} + 2151.4 \text{ lbs}$$



$$R_1 = D + S = 443.5 \text{ lbs} + 317.9 \text{ lbs}$$

$$R_2 = D + S = 443.5 \text{ lbs} + 317.9 \text{ lbs}$$

*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 load cases required to fully design an actual structure are not 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 snow load calculations provided by this online tool are for educational and illustrative purposes only. Medek Design assumes no liability or loss for any designs presented and does not guarantee fitness for use.

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