



Snow Load Report

1. Roof and Building Data

Ground Snow Load (Pg): 30.0 psf
Roof Pitch: 4 /12
Risk Category: II
Eave-to-Ridge (W): 30 ft.
Terrain Category: C
Exposure: Fully Exposed
Thermal Factor (Ct): 1.10
Roof Surface: Metal
Roof System: Common Truss
Spacing: 24 in. o/c
Overhang: 18 in.

2. Design Loads

Top Chord Dead Load: 7 psf
Bottom Chord Dead Load: 10 psf
SF (Slope Factor) = $1/\text{Cosine}(\Phi) = 1.05$ (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): 7.4 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
 $C_e = 0.90$ = Exposure Factor, as determined by ASCE 7-10 Table 7-2 (Terrain Cat. C, Exp. Fully Exposed)
 $C_t = 1.10$ = 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)
 $p_g = 30.0$ psf = Ground Snow Load in psf

$$p_f = 0.7C_eC_tI_s p_g = 0.7(0.90)(1.10)(1.00)(30.0) = 20.8 \text{ psf}$$

Subject Snow Loads	Customer	Location	Job No. 2025A658
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$$p_{\text{windward}} = 0.3p_s = (0.3)(17.9) = 5.4 \text{ psf}$$

$$p_{\text{leeward}} = p_s = 17.9 \text{ psf}$$

$$\gamma = 0.13(30.0) + 14 = 17.90 \text{ pcf}$$

$$h_d = .43 \sqrt[3]{30} \sqrt[4]{30.0 + 10} - 1.5 = 1.86 \text{ ft. } [l_u = 30 \text{ ft.}]$$

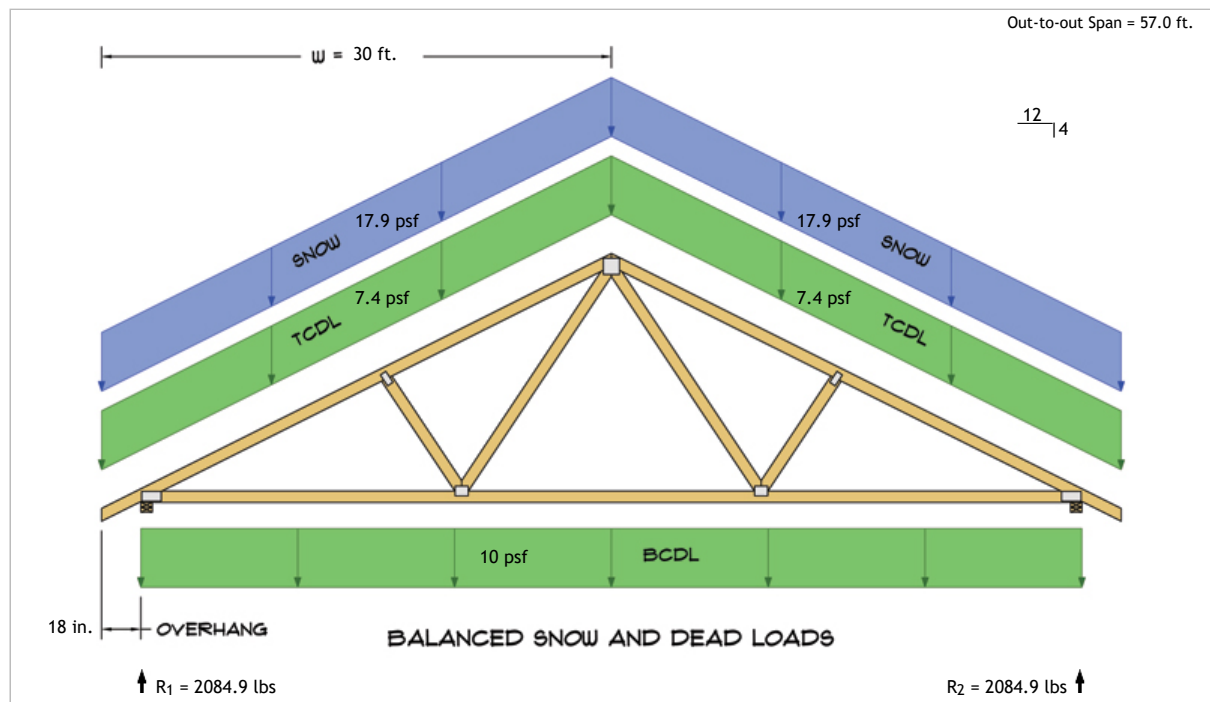
$$l_d = \frac{8}{3} \times 1.86 \times \sqrt{12/4} = 8.59 \text{ ft.}$$

$$p_d = \frac{1.86 \times 17.90}{\sqrt{12/4}} = 19.2 \text{ psf}$$

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.

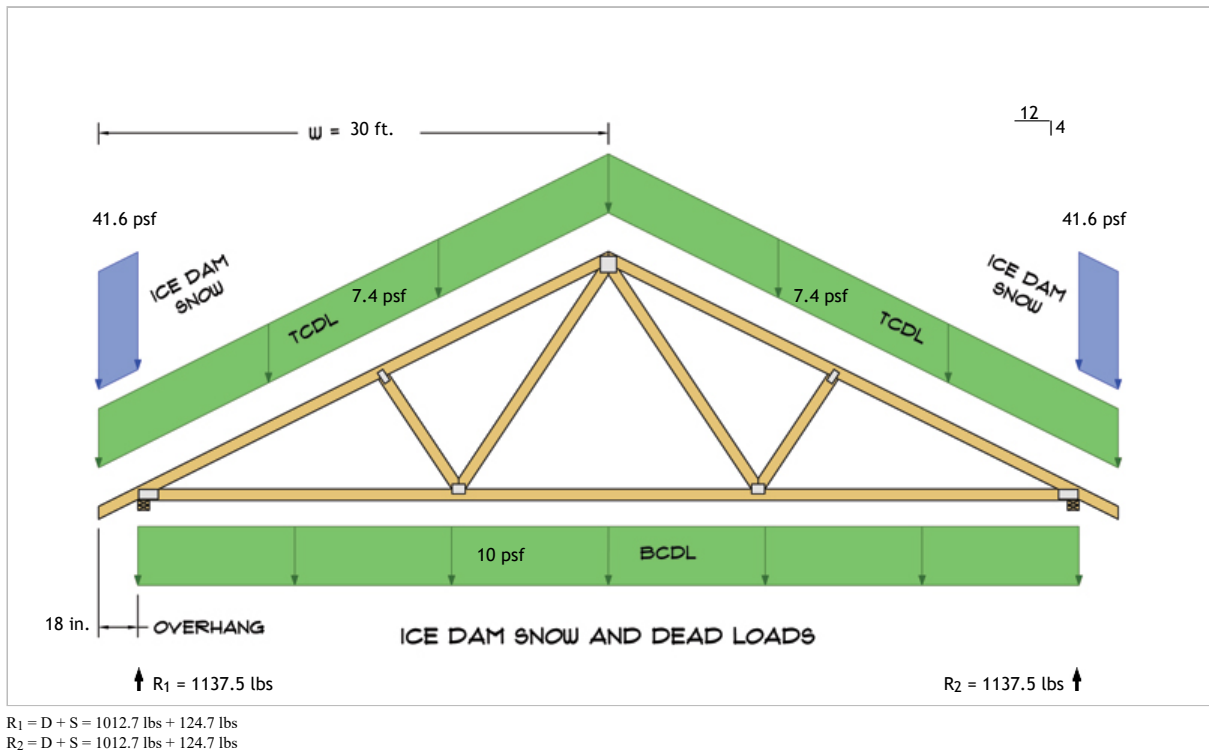
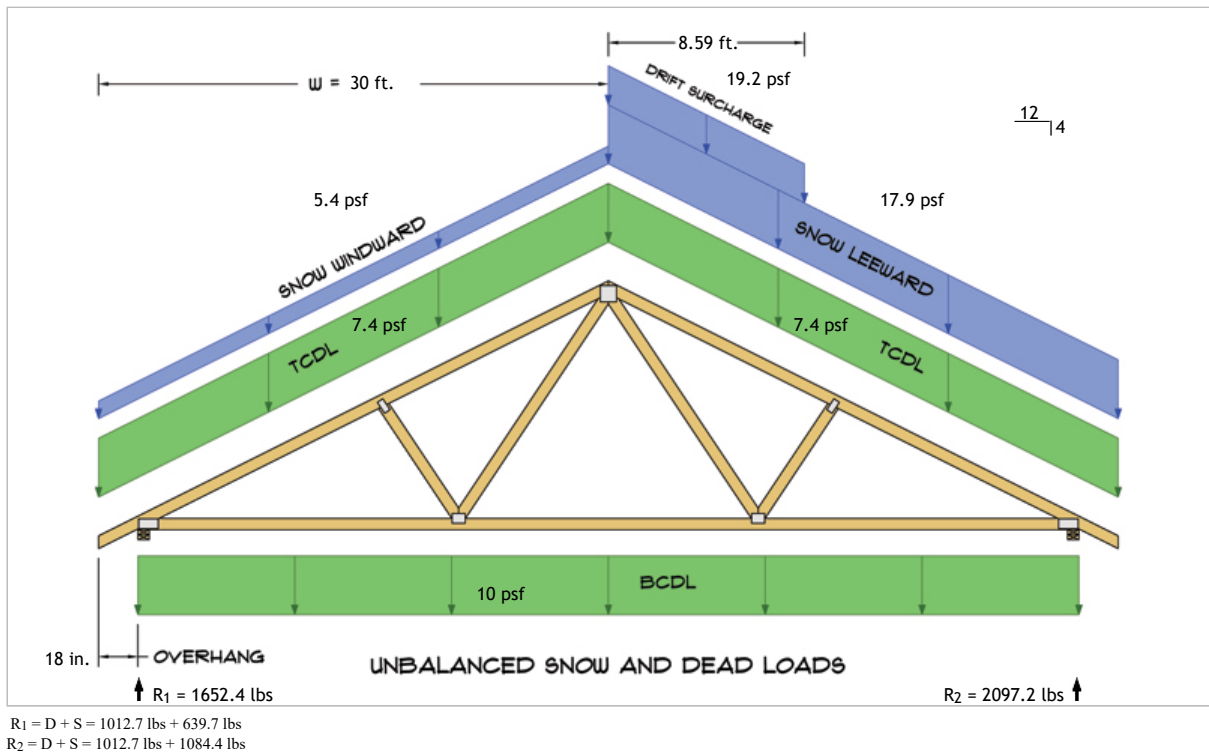
$$2p_f = (2)(20.8) = 41.6 \text{ psf}$$



$$R_1 = D + S = 1012.7 \text{ lbs} + 1072.1 \text{ lbs}$$

$$R_2 = D + S = 1012.7 \text{ lbs} + 1072.1 \text{ lbs}$$

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