



Snow Load Report

1. Roof and Building Data

Ground Snow Load (Pg): 30.0 psf
Roof Pitch: 3 /12
Risk Category: II
Eave-to-Ridge (W): 13 ft.
Terrain Category: C
Exposure: Partially Exposed
Thermal Factor (C_t): 1.10
Roof Surface: Asphalt Shingles
Roof System: Common Truss
Spacing: 16 in. o/c
Overhang: 12 in.

2. Design Loads

Top Chord Dead Load: 7 psf
Bottom Chord Dead Load: 10 psf
SF (Slope Factor) = $1/\text{Cosine}(\Phi) = 1.03$ (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): 7.2 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 = 1.00 = Exposure Factor, as determined by ASCE 7-10 Table 7-2 (Terrain Cat. C, Exp. Partially 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

$$p_f = 0.7C_eC_tI_s p_g = 0.7(1.00)(1.10)(1.00)(30.0) = 23.1 \text{ psf}$$

Subject Snow Loads	Customer	Location	Job No. 2026A344
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$$p_{\text{windward}} = 0.3p_s = (0.3)(23.1) = 6.9 \text{ psf}$$

$$p_{\text{leeward}} = p_s = 23.1 \text{ psf}$$

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

$$h_d = .43 \sqrt[3]{20} \sqrt[4]{30.0 + 10} - 1.5 = 1.44 \text{ ft. } [l_u = 20 \text{ ft.}]$$

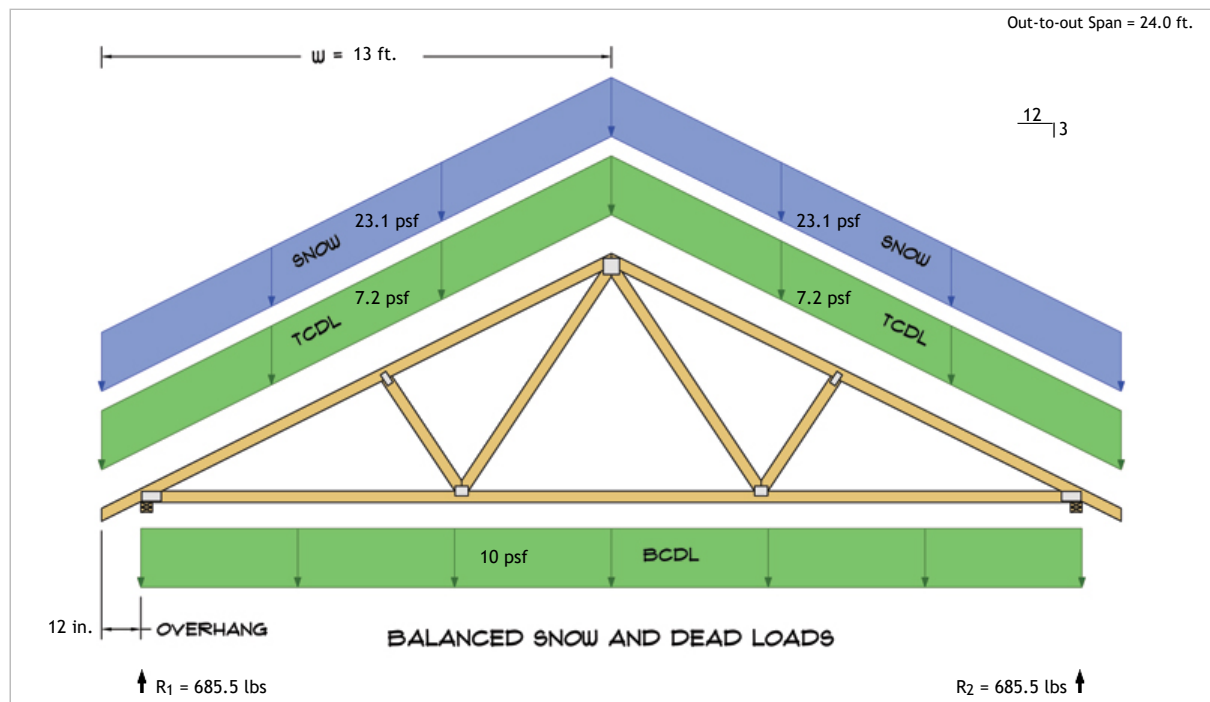
$$l_d = \frac{8}{3} \times 1.44 \times \sqrt{12/3} = 7.66 \text{ ft.}$$

$$p_d = \frac{1.44 \times 17.90}{\sqrt{12/3}} = 12.8 \text{ psf}$$

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.

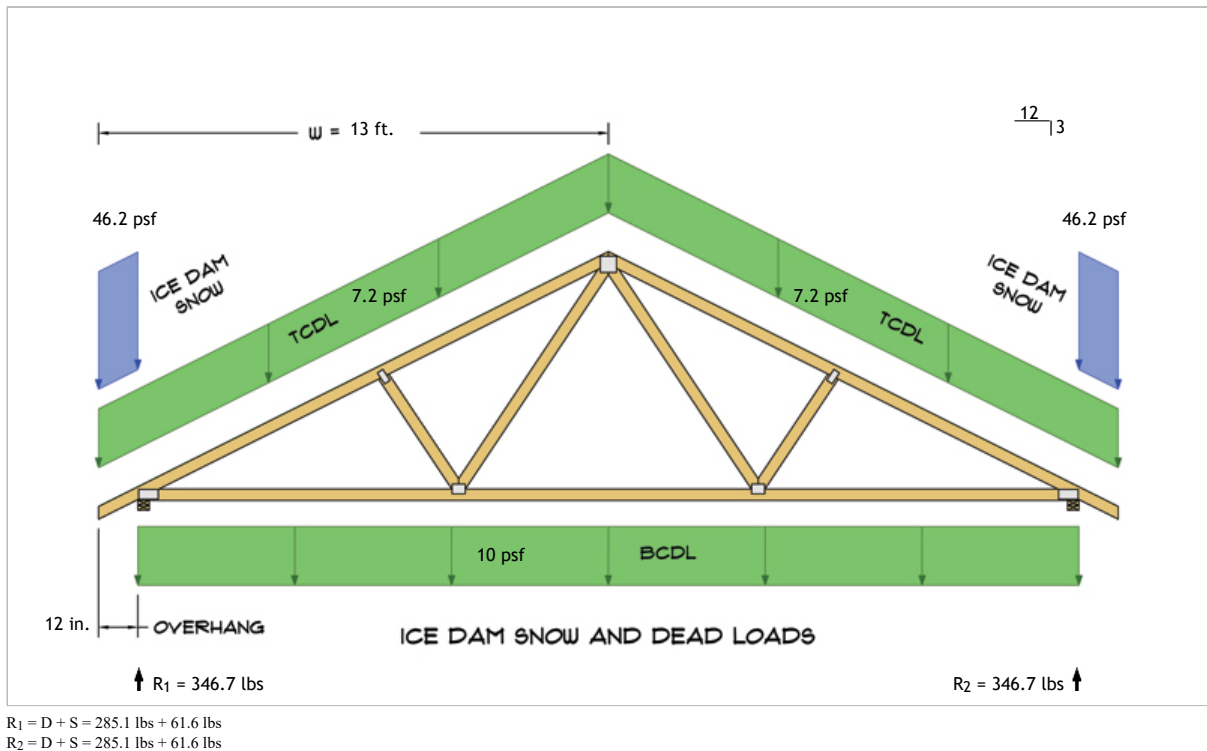
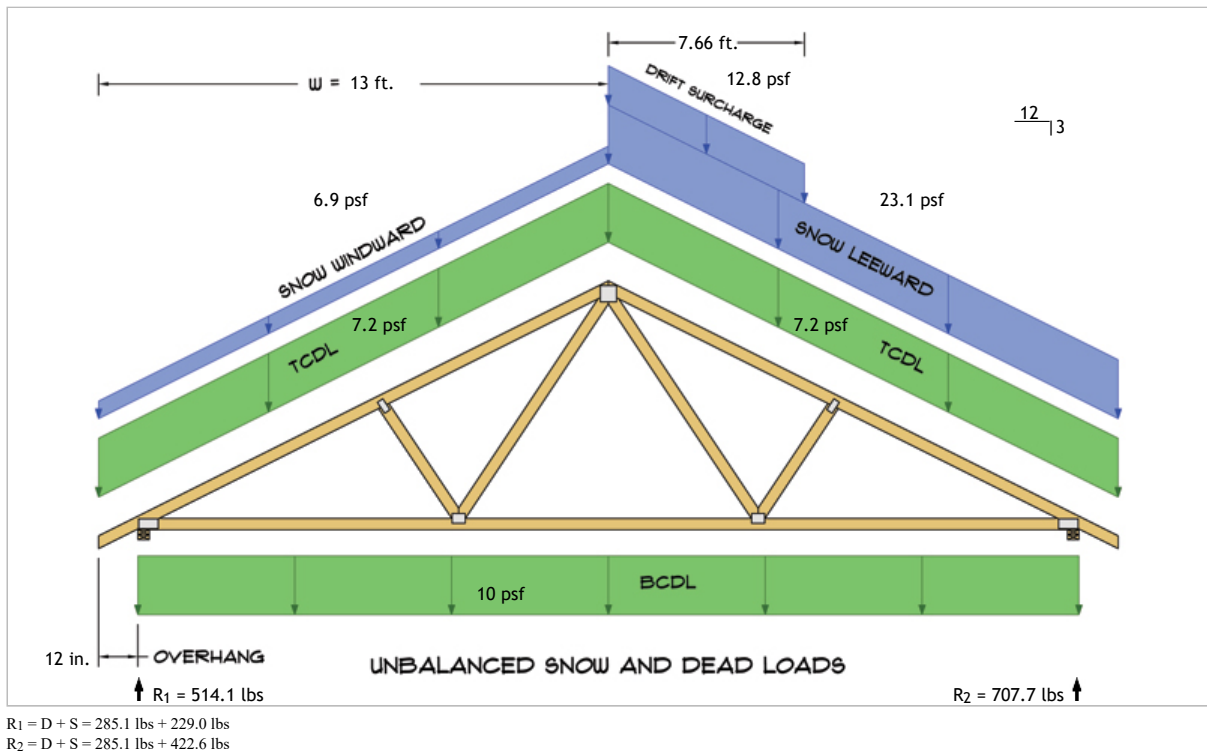
$$2p_f = (2)(23.1) = 46.2 \text{ psf}$$



$$R_1 = D + S = 285.1 \text{ lbs} + 400.4 \text{ lbs}$$

$$R_2 = D + S = 285.1 \text{ lbs} + 400.4 \text{ lbs}$$

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