



Snow Load Report

1. Roof and Building Data

Ground Snow Load (Pg): 50.0 psf
Roof Pitch: 1 /12
Risk Category: II
Eave-to-Ridge (W): 13 ft.
Terrain Category: C
Exposure: Partially Exposed
Thermal Factor (Ct): 1.00
Roof Surface: Bituminous Membrane
Roof System: Rafter
Spacing: 24 in. o/c
Overhang: 12 in.

2. Design Loads

Top Chord Dead Load: 15 psf
Bottom Chord Dead Load: 10 psf
SF (Slope Factor) = $1/\text{Cosine}(\Phi) = 1.00$ (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): 15.1 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 pf 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)
 $C_t = 1.00$ = 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)
 $p_g = 50.0$ psf = Ground Snow Load in psf

$$p_f = 0.7C_eC_tI_s p_g = 0.7(1.00)(1.00)(1.00)(50.0) = 35.0 \text{ psf}$$

Subject Snow Loads	Customer	Location	Job No. 2025A643
Engr. Engineer	Company Name 123 Street City, State 12345 ph. (888) 777-5555 www.website.com		Rev. -
Date 12/9/2025			Page 1



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

Copyright © 2025

A minimum roof snow load, p_m shall apply to monoslope, hip and gable roofs with slopes less than 15 degrees using the following equations:

Where p_g is 20 psf or less: $p_m = I_s p_g$

Where p_g exceeds 20 psf: $p_m = I_s (20)$

Minimum roof snow load of $p_m = I_s (20) = 1.00 \times 20 = 20.0$ psf and hence does not control.

For locations where p_g is 20 psf or less, but not zero, all roofs with slopes (in degrees) less than $W/50$ with W in feet shall included a 5 psf rain-on-snow surcharge load. This additional load applies only to the sloped roof (balanced) load case and need not be used in combination with drift, sliding, unbalanced, minimum, or partial loads.

Roof slope in degrees (4.76°) is greater than $W/50 = 0.3$, the 5.0 psf rain-on-snow surcharge load does not apply.

Calculate sloped roof snow load p_s using the following equation:

$$p_s = C_s p_f$$

where:

p_s = Sloped Roof Snow Load in psf

$C_s = 1.00$ = Roof Slope Factor, as determined by ASCE 7-10 Sec. 7.4.1-7.4.4 and Figure 7-2

p_f = Flat Roof Snow Load in psf

Roof surface (Bituminous Membrane) is considered a "slippery" roof. For a $C_t = 1.00$ the roof slope factor C_s is given by the dashed line of ASCE 7-10 Figure 7-2a.

$$p_s = C_s p_f = (1.00)(35.0) = 35.0 \text{ psf}$$

Calculate unbalanced snow load for hip and gable roofs as shown in ASCE 7-10 Figure 7-5.

Unbalanced snow loads are required for roof pitches between 1/2 on 12 to 7 on 12.

Using the following equations:

$$\gamma = 0.13 p_g + 14 \text{ (snow density)}$$

$$h_d = .43 \sqrt[4]{l_u} \sqrt{p_g} + 10 - 1.5 \text{ (drift height) [if } l_u < 20 \text{ ft., use } l_u = 20 \text{ ft.]}$$

$$l_d = \frac{8}{3} h_d \sqrt{S} \text{ (width of drift surcharge)}$$

$$p_d = h_d \gamma / \sqrt{S} \text{ (drift surcharge snow load)}$$

where:

γ = Snow density in pcf, not to exceed 30 pcf.

h_d = Drift height in feet, as determined by eqn. or ASCE 7-10 Fig. 7-9.

l_u = W = Ridge to eave distance in feet, windward side of roof.

S = 12/Roof Pitch

l_d = Width of drift surcharge in feet.

p_d = Drift Surcharge Snow Load in psf

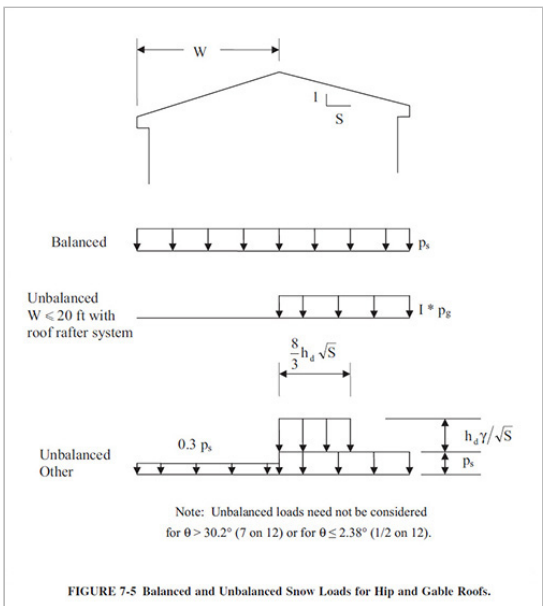


FIGURE 7-5 Balanced and Unbalanced Snow Loads for Hip and Gable Roofs.

Subject Snow Loads	Customer	Location	Job No. 2025A643
Engr. Engineer	Company Name 123 Street City, State 12345 ph. (888) 777-5555 www.website.com		Rev. -
Date 12/9/2025			Page 2

STRUCTURAL ENGINEERS
COMPANY LOGO

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

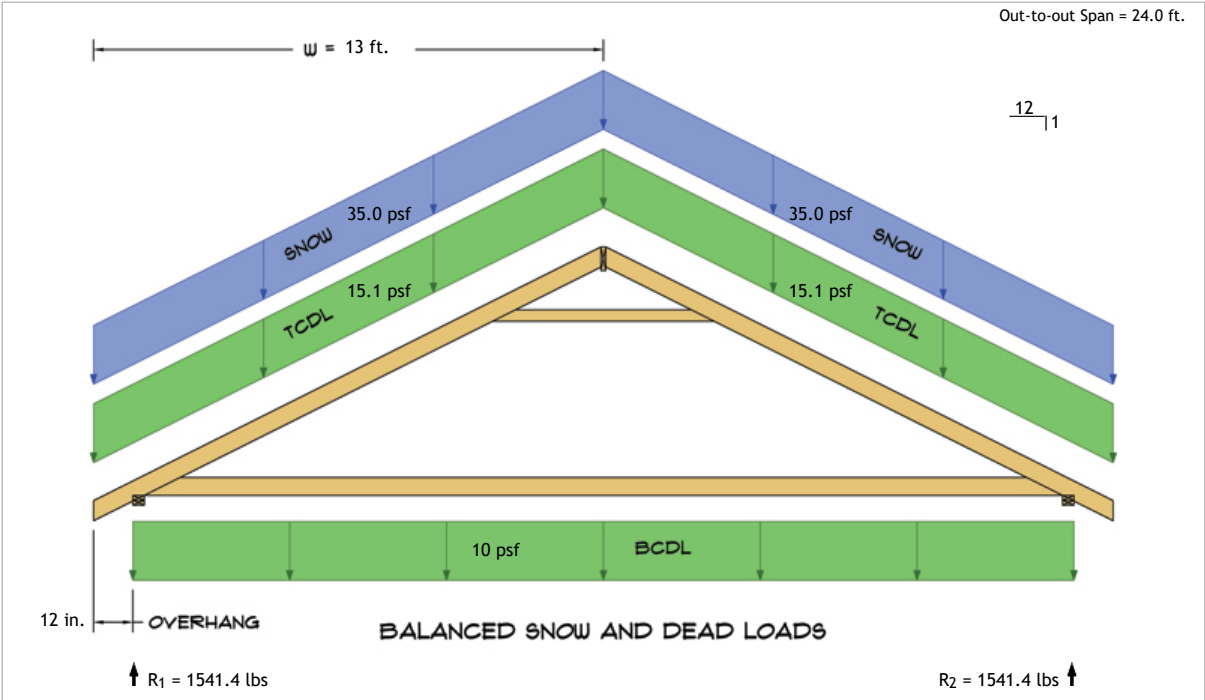
Copyright © 2025

For a roof rafter system with $W \leq 20$ ft., the simplified unbalanced snow load is given by the third diagram of ASCE Figure 7-5.

$p_{windward} = 0.0 \text{ psf}$
 $p_{leeward} = I_s p_g = (1.00)(50.0) = 50.0 \text{ psf}$

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.

$2p_f = (2)(35.0) = 70.0 \text{ psf}$

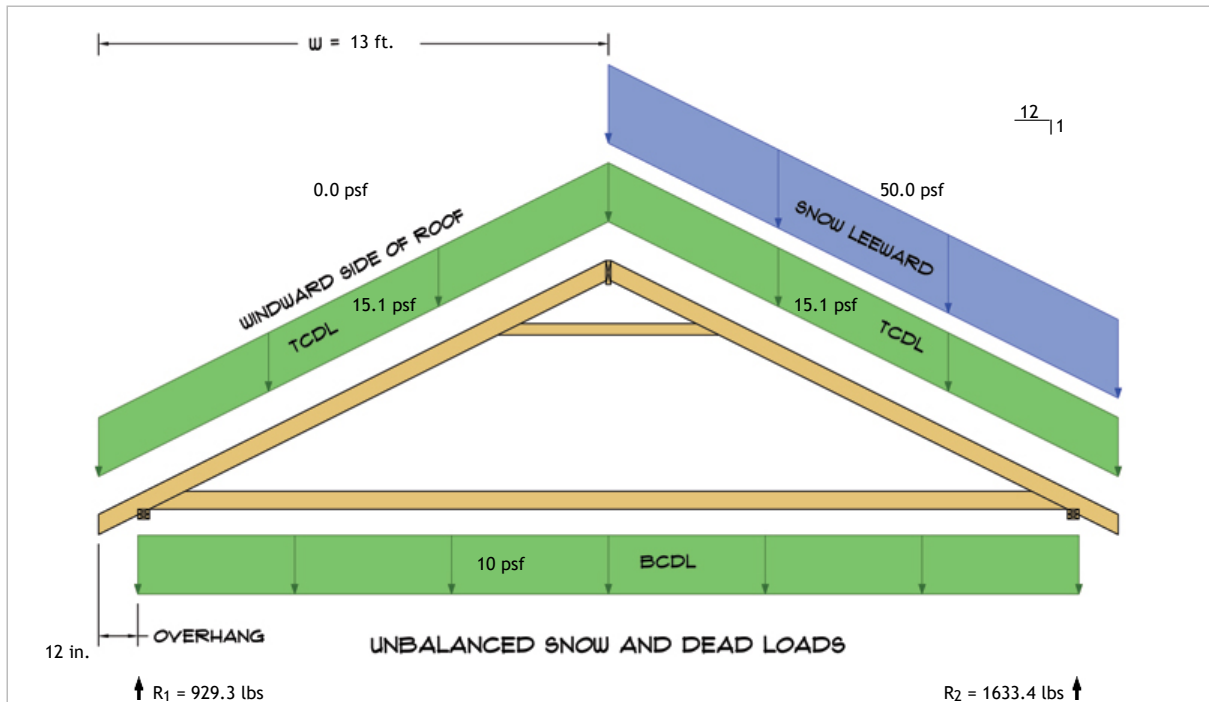


$R_1 = D + S = 631.4 \text{ lbs} + 910.0 \text{ lbs}$
 $R_2 = D + S = 631.4 \text{ lbs} + 910.0 \text{ lbs}$

Subject	Snow Loads	Customer	Location	Job No.	2025A643
Engr.	Engineer	Company Name 123 Street City, State 12345 ph. (888) 777-5555 www.website.com			Rev.
Date	12/9/2025				-
				Page	3

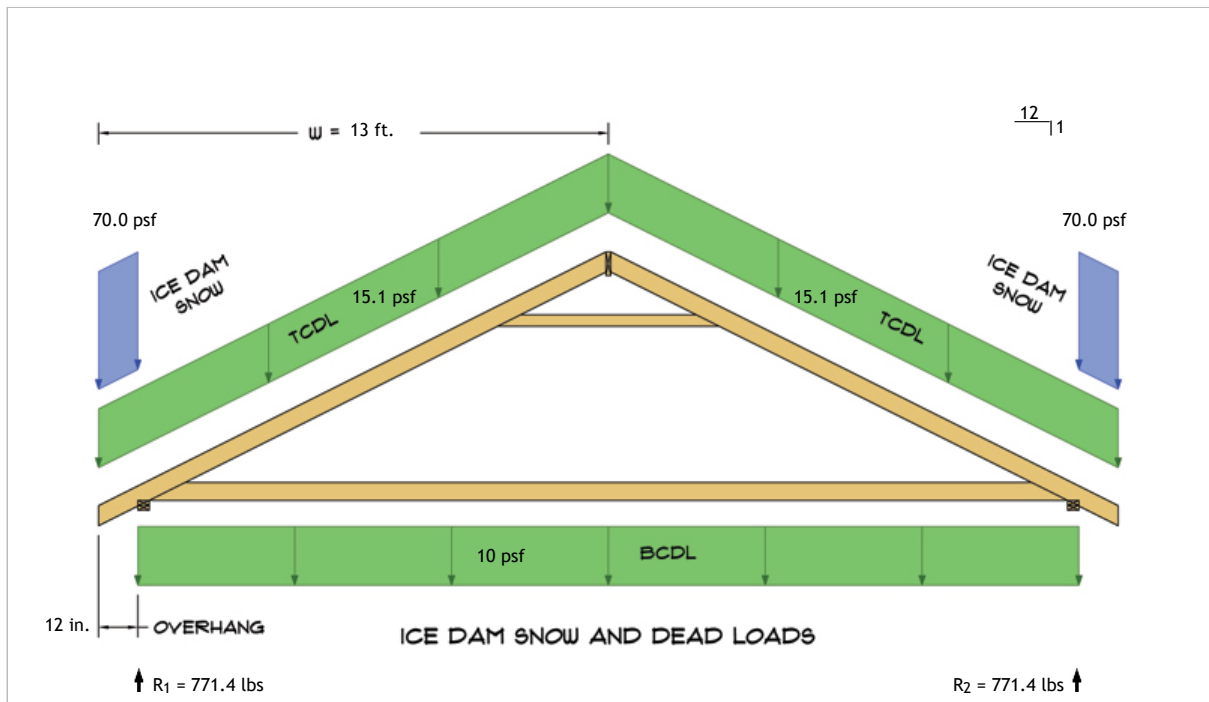


This report may not be
copied, reproduced or
distributed without the
written consent of
Company Name



$$R_1 = D + S = 631.4 \text{ lbs} + 297.9 \text{ lbs}$$

$$R_2 = D + S = 631.4 \text{ lbs} + 1002.1 \text{ lbs}$$



$$R_1 = D + S = 631.4 \text{ lbs} + 140.0 \text{ lbs}$$

$$R_2 = D + S = 631.4 \text{ lbs} + 140.0 \text{ lbs}$$

Subject	Snow Loads	Customer	Location	Job No.	2025A643	
Engr.	Engineer	Company Name 123 Street City, State 12345 ph. (888) 777-5555 www.website.com STRUCTURAL ENGINEERS COMPANY LOGO This report may not be copied, reproduced or distributed without the written consent of Company Name Copyright © 2025			Rev.	-
Date	12/9/2025				Page	4



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

Copyright © 2025