

Snow Loads : ASCE 7-22

Ultimate Snow Forces

Roof slope = 4.8 deg
 Horiz. eave to ridge dist (W) = 21.5 ft
 Roof length parallel to ridge (L) = 103.0 ft

Type of Roof Hip and gable w/ trussed systems

Ground Snow Load Pg = 20.0 psf

Risk Category = II

Snow Factor = 1.0

Roof R value Roof = 30

Thermal Factor Ct = 1.190

Exposure Factor Ce = 1.00

Pf = 0.7*Ce*Ct*I*Pg = 16.7 psf

Unobstructed Slippery Surface no

Sloped-roof Factor Cs = 1.00

Balanced Snow Load = **16.7 psf**

Near ground level surface balanced snow load = **20.0 psf**

Rain on Snow Surcharge Angle = 0.43 deg

Code Maximum Rain Surcharge = 8.0 psf

Rain on Snow Surcharge = 0.0 psf

Ps plus rain surcharge = 16.7 psf

Minimum Snow Load Pm = 20.0 psf

Uniform Roof Design Snow Load = **20.0 psf**

NOTE: Alternate spans of continuous beams shall be loaded with half the design roof snow load so as to produce the greatest possible effect - see code for loading diagrams and exceptions for gable roofs

Unbalanced Snow Loads - for Hip & Gable roofs only

Winter Wind Parameter W2 = 0.55

Required if slope is between 7 on 12 = 30.26 deg
 and 2.38 deg = 2.38 deg **Unbalanced snow loads must be applied**

Windward snow load = 5.0 psf = 0.3Ps

Leeward snow load from ridge to 18.14' = 26.1 psf = hdy / √S + Ps

Leeward snow load from 18.14' to the eave = 16.7 psf = Ps