LARIMER COUNTY | Community Development

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Structural Design Information

2024 International Residential Code (IRC)

Homes and accessory buildings may be constructed per IRC prescriptive design requirements for sites where ground snow loads do not exceed 70 psf and where Ultimate Design Wind Speeds are less than 140 mph. Designs for sites exceeding these limits may instead use the International Building Code (2024 IBC), ASCE Minimum Design Loads for Buildings and Other Structures (ASCE 7), AWC Wood Frame Construction Manual (WFCM), AISI Standard for Cold-Formed Steel Framing - Prescriptive Method for One- and Two-Family Dwellings (AISI S230-2019), ICC Standard on the Design and Construction of Log Structures (ICC 400-2022), or ICC Standard for Residential Construction in High-Wind Regions (ICC 600-2020). Loafing sheds and pole barns may be constructed per Larimer County Prescriptive Design Standards. See below for design values.

2024 International Building Code (IBC)

1608.2 Ground Snow Loads.
The design ground snow load shall comply with the data contained in Colorado Design Snow Loads published by the Structural Engineers Association of Colorado (dated April, 2016), multiplied by 1.6, or the table below for Risk Category I and II buildings or structures (see amended Sections for Risk Category III and IV buildings and structures). The design roof snow load values shall be determined from Section 1608 of the IBC, including all applicable factors, and loading and drifting considerations of ASCE 7-22, Chapter 7, but in no case shall the final design roof snow load be less than a uniformly distributed load of 35 psf.

Ground Snow Load Table Notes:	Ground Elevation does not exceed (feet)	Ground Snow Load P_g (psf)
Ground snow load (pg) may be linearly interpolated between tabulated values. For ground elevations at or above 10,000 feet, the ground snow load (P_g) shall be determined from the SEAC Snow Loads Report and Map noted above	5000	55
	6000	70
	6500	80
	7000	95
	8000	110
	9000	160

1609 Wind Loads
Minimum Basic Wind Speeds* (**V**) vary between 115 and 225 mph. Wind exposure category shall be Exposure C, unless designated otherwise by the design professional based on site-specific conditions and approved by the Building Official. Basic Wind Speed for a project shall comply with the Colorado Front Range Gust Map – ASCE 7-22 Compatible, published by the Structural Engineers Association of Colorado or the Larimer County Basic Wind Speed Map. See Larimer County's **interactive winds map** for wind speeds, snow loads and other site design criteria.

1611. 1 Design Rain Loads
The design rainfall shall be based on the 100-year 15-minute duration event, or on other rainfall rates determined from approved local weather data. Alternatively, a design rainfall of twice the 100-year hourly rainfall rate indicated in International Plumbing Code Figure 1106.1(1) shall be permitted.

1612 Flood Loads.
Building construction within food hazard areas shall comply with the requirements of the Larimer County Land Use Code.

1613 Earthquake Loads. Except as noted below, seismic design values shall be determined from Section 1613 of the IBC.
Site-specific seismic design values shall be determined from https://earthquake.usgs.gov/hazards/designmaps/
For Risk categories I & II, the following values may be used for design:

0.2 second spectral response acceleration S_s = 0.229g, Site Class D, Seismic Design Category B
1.0 second spectral response acceleration S_1 = 0.068g, Site Class D, Seismic Design Category B

1809.5 Frost protection. Minimum frost depth is 30 inches below grade countywide.

Basic Wind Speed is called Ultimate Design Wind Speed (V_{ult}) in the 2024 IRC and in some prior editions of the IBC.