

## CHAPTER 16 STRUCTURAL DESIGN

Chapter 16 establishes minimum design requirements so that the structural components of buildings are proportioned to resist the loads that are likely to be encountered. In addition, this chapter assigns buildings and structures to risk categories that are indicative of their intended use. The loads specified herein, along with the required load combinations, have been established through research and service performance of buildings and structures. The application of these loads and adherence to the serviceability criteria enhances the protection of life and property.

### City of Kingman Design Criteria for Residential Construction per the 2018 IRC

TABLE 301.2(1)  
CLIMATIC AND DEOGRAPHIC DESIGN CRITERIA

GROUND SNOW LOAD	WIND DESIGN				SEISMIC DESIGN CATEGORY	SUBJECT TO DAMAGE FROM			WINTER DESIGN TEMP	ICE BARRIER UNDERLAYMENT REQUIRED	FLOOD HAZARDS	AIR FREEZING INDEX	MEAN ANNUAL TEMP
	Speed (mph)	Topographic effects	Special wind region	Windborne debris zone		Weathering	Frost line depth	Termite					
5PSF	115	B	NO	NO	C	NEGLECTIBLE	12"	MOD/HEAVY	34	NO	YES	1500<	61.4

### City of Kingman Design Criteria for Commercial Construction per the 2018 IBC and ASCE/SEI 7-2016

#### IBC Section 1603.1 General.

Construction documents shall show the size, section and relative locations of structural members with floor levels, column centers and offsets dimensioned. The design loads and other information pertinent to the structural design required by Sections 1603.1.1 through 1603.1.9 shall be indicated on the construction documents.

1. Floor and roof dead and live loads
2. Ground snow load,  $P_g$ .
3. Basic design wind speed,  $V$ , miles per hour (mph) (km/hr) and allowable stress design wind speed,  $V_{asd}$ , as determined in accordance with Section 1609.3.1 and wind exposure.
4. Seismic design category and site class.
5. Flood design data, if located in flood hazard areas established in Section 1612.3.
6. Design load-bearing values of soils.
7. Rain load data

City of Kingman Design Loads: (Risk Categories per IBC Table 1604.5)

1. Live loads – Table 1607.1
2. Ground snow load = 5psf - 10psf
3. Basic wind speed = 90mph-Cat I, 95mph-Cat II, 105mph-Cat III, 110mph- Cat IV: Exposure = Category B
4. Seismic design category = C – Cat I&II, C – Cat III, D – Cat IV: Site class = D
5. Flood design = <https://www.mohavecounty.us/ContentPage.aspx?id=124&page=14&cid=392>
6. Design load-bearing values = Geotech Soil Evaluation Required
7. Rain load data = 1.5 inches per hour (100-year)