

| REFERENCED CBC SECTIONS AND ASCE 7 CHAPTERS FOR LOADS | | |
|---|----------------------------|------------------------|
| Type of Load | CBC Section | ASCE 7 Chapter |
| Dead loads | Section 1606 | Chapter 3 |
| Live loads | Section 1607, Table 1607.1 | Chapter 4 |
| Snow loads | Section 1608 | Chapter 7 |
| Wind loads | Section 1609 | Chapter 6 |
| Soil lateral loads | Section 1610 | Chapter 3 |
| Rain loads | Section 1611 | Chapter 8 |
| Flood loads | Section 1612 | Chapter 5 ¹ |
| Earthquake loads | Section 1613 | Chapter 11-22 |

1. Section 1612 references ASCE 24, which references Chapter 5 of ASCE 7.

3. Structural Analysis, Design and Detailing.

Once the applicable loads are determined, the structural system of the building must be analyzed to determine the effects of the governing gravity and lateral loads that act on the structure. The structural system of a typical building consists of the roof and floor systems, walls, beams and columns, and the foundation. From the structural analysis, the next step is to design the structural elements and systems to provide the minimum level of resistance in accordance with the various load combinations prescribed in Section 1605.

Once the structural elements and systems are designed, the next step is to detail the load transfer connections to provide a complete load path from the point of origin to the resisting element. The final step is to prepare a complete set of construction documents as required by Sections 106 and 1603.

General Requirements

1. Occupancy Category (IBC/CBC Table 1604.5).

Determine the occupancy category of the building based on Table 1604.5.

Where a structure is occupied by two or more occupancies that are not the same occupancy category, the building must be classified in the highest occupancy category corresponding to the various occupancies.

Where structures have two or more portions that are structurally separated, each separate portion should be separately classified.

Where a separated portion of a structure provides required access or egress from another portion of the building with a higher occupancy category, both portions of the building must be assigned the higher occupancy category.

Where a separated portion of a structure shares life safety components with another portion of the building with a higher occupancy category, both portions of the building must be assigned the higher occupancy category.

2. Floor and roof live loads (IBC/CBC Table 1607.1).

Determine uniformly distributed and concentrated floor live load for the floor areas of the building in accordance with Section 1603.1.1 and Table 1607.1.

Floor live load reduction in accordance with Section 1607.9 should be indicated for each type of live load that is reduced.

Determine the roof live load for roof areas in accordance with Section 1607.11.

Roof live load reduction in accordance with Section 1607.11.2 should be indicated for roof live loads that are reduced.

3. Snow load (IBC/CBC Section 1608, ASCE 7 Section 7).

Determine the ground snow load, P_g , based on the location of the building site in accordance with Figure 1608.2 for the contiguous United States and Table 1608.2 for Alaska.

In areas where the ground snow load, P_g , exceeds 10 psf, the following information should be determined:

1. Flat-roof snow load, P_f .
2. Snow exposure factor, C_e .
3. Snow load importance factor, I .
4. Thermal factor, C_t .