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Structural Review

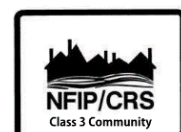
STRUCTURAL SYSTEMS (Chapters 16, 17, 18 of the IBC- 2018, ASCE 7-16, ASCE- 24)

1. **STRUCTURAL DESIGN (Chapter 16)**
2. STRUCTURAL DESIGN CALCULATIONS
 - a. 2 Sets Submitted for all structural members (106, 107.1, 107.2.1, 1604, 1605)
3. DESIGN LOADS ON CONSTRUCTION DOCUMENTS (1603)
 - a. Uniformly distributed floor live loads (1603.1.1, Table 1607.1)
 - b. Floor Area Use Loads
 - c. Live load reduction (1603.1.1, 1607.10, 1607.11)
 - d. Roof live loads (1603.1.2, 1607.12)
 - e. Roof snow loads (1603.1.3, 1608; Chapter 7 of ASCE 7)
 - f. Ground snow load, P_g (1608.2; 7.2 of ASCE 7)
 - i. If $P_g > 10$ psf, flat-roof snow load, P_f (7.3 of ASCE 7)
 - ii. If $P_g > 10$ psf, snow exposure factor, C_e (Table 7-2, 7.3.1 of ASCE 7)
 - iii. If $P_g > 10$ psf, snow load importance factor, I_s (7.3.3, Table 1.5-2 of ASCE 7)
 - iv. If $P_g > 10$ psf, roof thermal factor, C_t (Table 7-3, 7.3.2 of ASCE 7)
 - g. Sloped roof snow load, P_s (7.4 of ASCE 7)
 - h. Ponding instability (1608.3; 7.11 of ASCE 7)
4. **DESIGN LOADS**
 - a. Wind loads (1603.1.4, 1609; Chapters 26 - 31 of ASCE 7)
 - i. Design procedure (1609.1.1, 1609.6, Chapters 26 - 31 of ASCE 7)
 - ii. Alternate all-heights method (1609.6)
 - iii. **Wind speed (1609.3; Fig. 26.5.1 of ASCE 7)**
 - iv. **Risk category (Table 1604.5; Table 1.5-1 of ASCE 7)**
 - v. Surface roughness/Exposure categories (1609.4; 26.7 of ASCE 7)
 - vi. Internal pressure coefficient (26.11, Table 26.11-1 of ASCE 7)
 - vii. Component and cladding pressures (Chapter 30 of ASCE 7)



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- viii. Main wind-force resisting system (27.4, 27.6, 28.4, 28.6 of ASCE 7)

- b. Earthquake design data (1603.1.5, 1613; Chapters 11 - 13 and 15 - 23 of ASCE 7)
 - i. **Risk category (Table 1604.5; Table 1.5-1 of ASCE 7)**
 - ii. **Seismic importance factor I_e (11.5.1, Table 1.5-2 of ASCE 7)**
 - iii. Mapped spectral response acceleration, S_s and S_1 (1613.3.1; 11.4.1 of ASCE 7)
 - iv. Design spectral response parameters, S_{DS} and SD_1 (1613.3.4; 11.4.4 of ASCE 7)
 - v. Site class (1613.3.2; 11.4.2, Chapter 20 of ASCE 7)
 - vi. Seismic design category (1613.3.5; 11.6 of ASCE 7)
 - vii. Basic seismic-force-resisting system (Table 12.2-1 of ASCE 7)
 - viii. Response modification coefficient, R (Table 12.2-1 of ASCE 7)
 - ix. Seismic response coefficient, CS (12.8.1.1 of ASCE 7)
 - x. Analysis procedure (12.6 of ASCE 7)
 - xi. Design base shear (12.8 of ASCE 7)

- c. **Flood loads (1603.1.7, 1612) (ASCE 24)**
 - i. Flood hazard area (1612.3)
 - ii. Documentation (1612.5)

- d. **Other loads**
 - i. Ice loads (1614; Chapter 10 of ASCE 7)
 - ii. Concentrated live loads (1607.4)
 - iii. Partition loads (1607.5)
 - iv. Impact loads (1607.9)
 - v. Misc. loads (1607.6, 1607.7, 1607.8, 1607.13, 1607.14, 1610, 1611, 2404)
 - vi. Structural integrity (1615)
 - vii. Design requirements (1615.1 - 1615.4)