



Structural Guidelines for IBC Engineered Designs

When buildings are designed to the 2003 International Building Code (IBC), the design criteria must be specified on the plans. The plans can serve as a complete source of design information to which architects, engineers, and building officials may turn when the building undergoes tenant improvements or additions. The IBC specifies a required drawing format as well as design criteria that must be included in the construction documents.

IBC 1603 requires construction documents to show the size, section, and relative locations of structural members with floor levels, column centers, and offsets fully dimensioned. The design loads and other information pertinent to the structural design must be clearly indicated on the construction documents.

Floor Live Load: Specify the uniformly distributed, concentrated, and impact floor live load used in the design of floor areas.

Roof Live Load: Specify the roof live load used in design of roof areas.

Wind Design Data: Specify the following information related to wind loads, regardless of whether wind loads govern the design of the lateral force-resisting system of the structure:

- Analysis procedure used in determining wind loads (within the limitations specified in the code)
 - IBC Conventional Light-Frame Construction (IBC 2308)
 - Wood Framed Construction Manual (WFCM)
 - IBC Simplified Method (IBC1609.6)
 - ASCE 7-02, Section 6.0
 - Method 1 – Simplified Procedure (ASCE 7-02, 6.4)
 - Method 2 – Analytical Procedure (ASCE 7-02, Sec. 6.5)
 - Method 3 – Wind Tunnel Procedure (ASCE 7-02, Sec. 6.6)
- Basic wind speed, 3-second gust (85 mph in our area)
- Wind importance factor (I_w) and Building Category (IBC Table 1604.5)
- Wind exposure category (IBC 1609.4). If more than one wind exposure is used, the wind exposure and applicable wind direction need to be specified on the drawings.
- Applicable internal pressure coefficient
- Components & Cladding. Specify the design wind pressures (psf) to be used for the design of exterior components and cladding materials not specifically designed by the registered design professional.

Seismic Design Data: Specify the following information related to seismic loads, regardless of whether seismic loads govern the design of the lateral force-resisting system of the structure:

- Analysis procedure used in determining seismic loads
 - IBC Conventional Light Frame Construction (IBC 2308)
 - Wood Framed Construction Manual (WFCM)
 - IBC Simplified Method (IBC Chapter 16)
 - ASCE 7-02 (Sec. 9.1-9.6, 9.13 and 9.14) as amended by the IBC 1614.1. Reference Table 9.5.2.5.1 (ASCE 7-02) for Permitted Analytical Procedures
 - Simplified Analysis (Sec. 9.5.4)
 - Equivalent Lateral Force Analysis (Sec. 9.5.5)
 - Modal Response Spectrum Analysis (Sec. 9.5.6)
 - Linear Response History Analysis (Sec. 9.5.7)
 - Nonlinear Response History Analysis (Sec. 9.5.8)

- Seismic importance factor (I_E)
- Mapped spectral accelerations (S_S and S_1)
- Site class
- Spectral response coefficients (S_{DS} and S_{D1})
- Seismic design category (SDC)
- Basic seismic-force-resisting system(s)
- Design base shear
- Seismic response coefficient(s), C_S
- Response modification factor(s), R

Flood Load (if applicable)

- Elevation of the proposed lowest floor, including basement
- Elevation to which any nonresidential building will be dry-flood-proofed

Special Loads (if applicable)

- Special loads applicable to the design of the structure or portion thereof with the specified section of the code that addresses the special loading condition