

GWINNETT COUNTY BUILDING PLAN REVIEW

Department of Planning & Development
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SEISMIC DESIGN **CODE COMPLIANCE GUIDELINES**

Plan review and permit requirements for seismic design of buildings.

Refer to the Building Code Compliance Checklist for additional requirements and permitting procedure.

Plan review is based on the following information:

DATE OF REVIEW: _____

PROJECT NAME: _____

PROJECT ADDRESS: _____

TYPE OF OCCUPANCY: _____ TYPE OF CONSTRUCTION: _____

List off applicable codes:

The Gwinnett County Construction Code

International Building Code -2006 Edition with 2007-2009-2010 Georgia State Amendments

International Mechanical Code -2006 Edition with 2007-2008-2010-2011-2012 Georgia State Amendments

International Fuel Gas Code -2006 Edition with 2007-2008-2009-2010 Georgia State Amendments

International Plumbing Code -2006 Edition with 2007-2008-2009-2010-2011-2012 Georgia State Amendments

NFPA National Electrical Code - 2011 Edition

International Energy Conservation Code -2009 Edition with 2011-2012 Georgia State Amendments

General Design Information for Gwinnett County:

Gwinnett County is typically:

Site Class D

Design Category C

Referenced Standards:

1. ASCE/SEI 7- 05 (American Society of Civil Engineers and Structural Engineering Institute)
“Minimum Design Loads for Buildings and Other Structures”

Determine Seismic Design Category:

1. Select the “Nature of Occupancy” from ASCE 7- 05, Table 1-1 “Occupancy Category of Buildings and Other Structures for Flood, Wind, Snow, Earthquake and Ice loads. (Select Occupancy Category I, II, III, or IV). (Also see IBC Table 1604.5).
2. Select the “Site Classification” from ASCE 7-05 Table 20.3-1 “Site Classification”. Gwinnett County is typically Site Class D. To select/specify Site Class C, a site specific report from a geo-technical engineer is required. (Also see IBC Table 1613.5.2).
3. Based on SS and SI values, S_{DS} and S_{D1} must be determined. Gwinnett County is typically (for site class D) $S_{DS} = 0.27$ and $S_{D1} = 0.14$.
4. Refer to ASCE 7- 05 Table 11.6 - 1 “Seismic Design Category Based on Short Period Response Acceleration Parameter”. Determine Seismic Design Category based on S_{DS} value and occupancy category.
5. Refer to ASCE 7- 05 Table 11.6 – 2 “Seismic Design Category Based on 1-S Period Response Acceleration Parameter”. Determine Seismic Design Category based on S_{D1} value and occupancy category.
6. Compare the Seismic Design Category selection from Table 11.6 – 1 and 11.6 – 2. The lesser Seismic Design Category from the 2 tables shall govern.

Seismic Analysis Requirements for a Proposed Building:

1. Indicate on the structural drawings the applicable Occupancy Category from ASCE 7 – 05 Table 1-1. (Indicate Occupancy Category I, II, III, or IV).
2. Indicate on the structural drawings the “Seismic Importance Factor” from ASCE 7-05 Table 11.5-1 “Importance Factors”.
3. Indicate on the structural drawings the “Site Classification” from ASCE 7-05 Table 20.3-1 “Site Classification”. Gwinnett County is typically Site Class D. To select/specify Site Class C, a site specific report from a geo-technical engineer is required. (Also see IBC Table 1613.5.2).

4. Provide S_s (Mapped Spectral Acceleration for Short Periods - Refer to ASCE 7- 05 Table 11.4-1 “Site Coefficient F_a ”) and S_1 (Mapped Spectral Acceleration for 1 Second Period – Refer to ASCE 7 – 05 Table 11.4-2 “Site Coefficient F_v ”) values.
5. Provide S_{DS} (Design Spectral Response Acceleration Parameter – Refer to ASCE 7 – 05 section 11.4.4) S_{D1} (Design Spectral Response Acceleration Parameter – Refer to ASCE 7 – 05 section 11.4.4).
6. Provide the Seismic Design Category.
7. Indicate on the structural drawings the Basic Seismic Force-Resisting System and corresponding response Modification Factor R_a . Refer to ASCE 7 – 05 Table 12.2-1 “Design Coefficients and Factors for Seismic Force-Resisting Systems”.
8. Indicate on the structural drawings the Seismic Analysis Procedure applicable to the building/structure. Refer to ASCE 7 - 5 sections 12.8 “Equivalent Lateral Force Procedure”, 12.9 “Modal Response Spectrum Analysis”, 12.14.1.1 “Simplified Design Procedure”, 16.1 “Linear Response History Procedure”, and 16.2 “Nonlinear Response History Procedure”.
9. Indicate on the structural drawings the Magnitude of Seismic Design Base Shear. Refer to ASCE 7 – 05 sections 12.1 “Structural Design Analysis”, 12.8.1 “Seismic Base Shear”, 12.9.4 “Scaling Design Values of Combined Response”, and 12.14.8.1 “ Seismic Base Shear”.

****For additional information refer to the Building Code Compliance Checklist****