

# **SEISMIC CODE EVALUATION**

## **HONDURAS**

*Evaluation conducted by Guillermo Santana*

**NAME OF DOCUMENT:** No document has ever been published or is available for seismic design in the Republic of Honduras.

**YEAR:**

**GENERAL REMARKS**

**SPECIFIC ITEMS:**

**NOTE:** Bracketed numbers refer to Code specific chapters or articles:  
[1.2.3]

    Parentheses numbers refer to Items of this document: (see 2.2)

### **1. SCOPE**

#### **1.1 Explicit Concepts.**

As can be seen from the map in section (2.1), Honduras has a considerable earthquake hazard. Historically it has suffered damage from earthquakes. Structural damage and liquefaction was reported as occurring within the Honduran territory during the Feb 6, 1976 Guatemala Earthquake.

#### **1.2 Performance Objectives.**

### **2. SEISMIC ZONING AND SITE CHARACTERIZATION**

#### **2.1 Seismic Zoning (Quality of Data).**

Earthquakes with epicenters in Honduras have been recorded during the recent history. In the graph, a plot of epicenters for the period between 1933 and 1992 shows that rapidly growing cities like San Pedro Sula (over 1,000,000) has been exposed to the hazard in the past.



- 2.2 Levels of Seismic Intensity.**
- 2.3 Near Fault considerations.**
- 2.4 Site Requirements.**
- 2.5 Site Classification.**
- 2.6 Peak Ground Accelerations (Horizontal and Vertical).**

### **3. PARAMETERS FOR STRUCTURAL CLASSIFICATION**

- 3.1 Occupancy and Importance.**
- 3.2 Structural Systems.**
- 3.3 Structural Regularity.**
- 3.4 Structural Redundancy.**
- 3.5 Ductility of elements and components.**

### **4. SEISMIC ACTIONS**

- 4.1 Elastic Response Spectra (Horizontal and Vertical).**
- 4.2 Design Spectra.**
- 4.3 Representation of acceleration time histories.**
- 4.4 Design Ground Displacement.**

### **5. DESIGN FORCES, METHODS OF ANALYSIS AND DRIFT LIMITATIONS**

- 5.1 Load Combinations including Orthogonal Seismic Load Effects.**
- 5.2 Simplified Analysis and Design Procedures.**
- 5.3 Static Method Procedures.**
- 5.4 Mode Superposition Methods.**
- 5.5 Non-Linear Methods.**
- 5.6 Torsional considerations.**
- 5.7 Drift Limitations.**
- 5.8 Soil-Structure Interaction Considerations.**

### **6. SAFETY VERIFICATIONS**

- 6.1 Building Separation.**
- 6.2 Requirements for Horizontal Diaphragms.**
- 6.3 Requirements for Foundations.**
- 6.4 P- $\Delta$  Considerations.**
- 6.5 Non-Structural Components.**
- 6.6 Provisions for Base Isolation.**

7. SMALL RESIDENTIAL BUILDINGS

8. PROVISIONS FOR EXISTING BUILDINGS

RECOMMENDATIONS FOR CODE IMPROVEMENT

*A code must be drafted.*