



Instructions for Determining Seismic Design Parameters

1. Go to the following website: <https://hazards.atcouncil.org>
You will see the following screen. Enter the project address as shown below and select “Search”

ATC Hazards by Location Our Sponsors

Overview

The purpose of this website is to provide users with site-specific hazard information that can be used to determine design loads for buildings and other structures. It is assumed that the users of this site have competency to understand how to calculate and apply the information provided here to determine design loads to structural models of buildings or other structures.

This website only returns values provided by the indicated reference documents. The results DO NOT reflect any state or local amendments to the values or any delineation lines made during the building code adoption process. Users should confirm any output obtained from this tool with the local Authority Having Jurisdiction before proceeding with design.

Values are site-specific for the location entered and may be dependent upon the elevation of the site, depending on the hazard of interest. Users are cautioned to provide the most accurate location for the building or structure site by specifying either the known street address, city and state or the latitude and longitude to at least five (5) decimal places. If only the name of the city/state or zipcode is provided, the website will return data for the centroid of the city or zipcode and thus could either over- or underestimate the values that should be used for the site of interest. An underestimation could result in a design that does not meet the requirements for minimum design loads for the building or structure under consideration.

Search for hazards by location

Search by Address Search by Coordinate

Enter address Search

Which hazards can I search for?

- Wind**
This provides users with a site-specific basic wind speed to help them determine design wind loads for buildings and other structures.
- Snow**
This provides users with a site-specific ground snow load to help them determine design snow loads for buildings and other structures.
- Tornado**
This provides users with site-specific tornado design wind speeds to help them determine tornado design wind loads for tornado storm shelters. See ICC-500 and FEMA P-361 for more information on storm shelters.
- Seismic**
This provides users with site-specific seismic loads to help them determine design loads for buildings and other structures.

2. Select the “Seismic” tab.

ATC Hazards by Location

Search by Address Search by Coordinate

1950 Parkside Dr, Concord, CA 94519, USA Search

Coordinates: 37.9813901, -122.0244214

Wind **Snow** **Tornado** **Seismic**

Print these results Save these results

ASCE 7-16 Select a dataset to view contours.

| | |
|--------------------------|---------------|
| MRI 10-Year | 64 mph |
| MRI 25-Year | 71 mph |
| | 75 mph |

Map **Satellite**

Map showing location of Concord, CA (1950 Parkside Dr) and surrounding areas (Fort Bragg, Willits, Ukiah, Gualala, Lakeport, Healdsburg).

3. Select the three drop down fields. The values shown below should typically be selected unless specific project parameters dictate otherwise. Use the map to zoom in to confirm the correct locations is select. The Seismic Design parameter will be displayed below.

ATC Hazards by Location

Search by Address Search by Coordinate

1950 Parkside Dr, Concord, CA 94519, USA Search

Coordinates: 37.9813901, -122.0244214

Wind Snow Tornado Seismic

Reference Document: ASCE7-10

Risk Category: II

Site Class: D - Stiff Soil

Report Title: Enter a title...

Print these results Save these results

Basic Parameters

| Name | Value | Description |
|-----------------|-------|--|
| S _s | 2.12 | MCE _R ground motion (period=0.2s) |
| S ₁ | 0.75 | MCE _R ground motion (period=1.0s) |
| S _{MS} | 2.12 | Site-modified spectral acceleration value |
| S _{M1} | 1.124 | Site-modified spectral acceleration value |
| S _{DS} | 1.413 | Numeric seismic design value at 0.2s SA |
| S _{D1} | 0.75 | Numeric seismic design value at 1.0s SA |

Map Satellite

Google

MCE_R Horizontal Res Spectrum

4. For all building types **except** those governed by the *California Residential Code*:
 - a. Using the values in the results, determine the Seismic Design Category per the **2016 CBC §1613.3.5**.
5. For those buildings governed by the *California Residential Code*:
 - a. Determine the Seismic Design Category per the **2016 CRC Table R301.2.2.1.1**. Note, per the **2016 CRC §301.2.2.1.2**, a Seismic Design Category E may be lowered to D₂, when either the building located in a Seismic Design Category D per the **2016 CBC §1613.3.5** or constructed where all the following apply:
 - i. All exterior shear wall lines or braced wall panels are in one plane vertically from the foundation to the uppermost story.
 - ii. Floors shall not cantilever past the exterior walls.
 - iii. The building is within the requirements of Section R301.2.2.5 for being considered as regular.

Definitions:

CBC – California Building Code

CRC – California Residential Code