

U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

SEISMIC-HAZARDS MAPS FOR THE CONTERMINOUS UNITED STATES

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ABSTRACT

This publication consists of six map sheets (titles and text included in this document, below), geospatial datasets, and metadata. The geospatial datasets consist of ArcInfo export files for the seismic-hazard point and polygon data shown on the sheets.

Probabilistic seismic-hazard maps were prepared for the conterminous United States portraying peak horizontal acceleration and horizontal spectral response acceleration for 0.2- and 1.0-second periods with probabilities of exceedance of 10 percent in 50 years and 2 percent in 50 years. All of the maps were prepared by combining the hazard derived from spatially smoothed historic seismicity with the hazard from fault-specific sources. The acceleration values contoured are the random horizontal component. The reference site condition is firm rock, defined as having an average shear-wave velocity of 760 m/sec in the top 30 meters corresponding to the boundary between NEHRP (National Earthquake Hazards Reduction program) site classes B and C.

This data set represents the results of calculations of hazard curves for a grid of points with a spacing of 0.05 degrees in latitude and longitude. The points were contoured to produce the final representation of the seismic hazard.

PURPOSE

This map is intended to summarize the available quantitative information about seismic ground motion hazard for the conterminous United States from geologic and geophysical sources.

SHEET 1 OF 6:

Title:

Peak Horizontal Acceleration with 10 Percent Probability of Exceedance in 50 Years

Discussion:

The acceleration values contoured are the random horizontal component. Reference site condition is firm rock, defined as having an average shear-wave velocity of 760 m/sec in the top 30 meters, corresponding to the boundary between NEHRP site classes B and

C. Documentation, gridded values, interactive maps, and GIS data used to make the maps are available at <http://eqhazmaps.usgs.gov/> or <http://pubs.usgs.gov/2005/2883>

Acknowledgments:

California part of the map produced jointly with the California Geological Survey.

References:

Frankel, A.D., Petersen, M.D., Mueller, C.S., Haller, K.M., Wheeler, R.L., Leyendecker, E.V., Wesson, R.L., Harmsen, S.C., Cramer, C.H., Perkins, D.M., and Rukstales, K.S., 2002, Documentation for the 2002 Update of the National Seismic-Hazard Maps: U.S. Geological Survey Open-File Report 02-420, 39 p.

Haller, K.M., Wheeler, R.L., and Rukstales, K.S., Documentation of changes in fault parameters for the 2002 National Seismic Hazard Maps—Conterminous United States except California: U.S. Geological Survey Open-File Report 02-467, 34 p.

SHEET 2 OF 6:

Title:

Peak Horizontal Acceleration with 2 Percent Probability of Exceedance in 50 Years

Discussion:

The acceleration values contoured are the random horizontal component. Reference site condition is firm rock, defined as having an average shear-wave velocity of 760 m/sec in the top 30 meters, corresponding to the boundary between NEHRP site classes B and C. Documentation, gridded values, interactive maps, and GIS data used to make the maps are available at <http://eqhazmaps.usgs.gov/> or <http://pubs.usgs.gov/2005/2883>

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SHEET 3 OF 6:

Title:

Horizontal Spectral Response Acceleration for 0.2-Second Period (5 Percent of Critical Damping) with 10 Percent Probability of Exceedance in 50 Years

Discussion:

The acceleration values contoured are the random horizontal component. Reference site condition is firm rock, defined as having an average shear-wave velocity of 760 m/sec in the top 30 meters, corresponding to the boundary between NEHRP site classes B and C. Documentation, gridded values, interactive maps, and GIS data used to make the maps are available at <http://eqhazmaps.usgs.gov/> or <http://pubs.usgs.gov/2005/2883>

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SHEET 4 OF 6:**Title:**

Horizontal Spectral Response Acceleration for 0.2-Second Period (5 Percent of Critical Damping) with 2 Percent Probability of Exceedance in 50 Years

Discussion:

The acceleration values contoured are the random horizontal component. Reference site condition is firm rock, defined as having an average shear-wave velocity of 760 m/sec in the top 30 meters, corresponding to the boundary between NEHRP site classes B and C. Documentation, gridded values, interactive maps, and GIS data used to make the maps are available at <http://eqhazmaps.usgs.gov/> or <http://pubs.usgs.gov/2005/2883>

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SHEET 5 OF 6:

Title:

Horizontal Spectral Response Acceleration for 1.0-Second Period (5 Percent of Critical Damping) with 10 Percent Probability of Exceedance in 50 Years

Discussion:

The acceleration values contoured are the random horizontal component. Reference site condition is firm rock, defined as having an average shear-wave velocity of 760 m/sec in the top 30 meters, corresponding to the boundary between NEHRP site classes B and C. Documentation, gridded values, interactive maps, and GIS data used to make the maps are available at <http://eqhazmaps.usgs.gov/> or <http://pubs.usgs.gov/2005/2883>

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SHEET 6 OF 6:

Title:

Horizontal Spectral Response Acceleration for 1.0-Second Period (5 Percent of Critical Damping) with 2 Percent Probability of Exceedance in 50 Years

Discussion:

The acceleration values contoured are the random horizontal component. Reference site condition is firm rock, defined as having an average shear-wave velocity of 760 m/sec in the top 30 meters, corresponding to the boundary between NEHRP site classes B and C. Documentation, gridded values, interactive maps, and GIS data used to make the maps are available at <http://eqhazmaps.usgs.gov/> or <http://pubs.usgs.gov/2005/2883>

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