RMS Peru Earthquake Model

Local Knowledge Combined With Advanced Earthquake Modeling Science

KEY BENEFITS

- Model approved for use by the Peruvian insurance regulator
- Developed in collaboration with local and regional seismic experts
- Countrywide coverage of liquefaction
- Differentiate risk based on local site conditions and building characteristics
- Model industrial risks using an advanced Industrial Facilities Model
- Run streamlined analyses using aggregate data

Approved by the Peruvian Insurance Regulator

The RMS® Peru Earthquake Model provides comprehensive coverage for modeling seismic risk in the country, incorporating advanced techniques applied to each model component. In developing the model, RMS collaborated with leading regional seismology and engineering experts, including from the Instituto Geofísico del Perú.

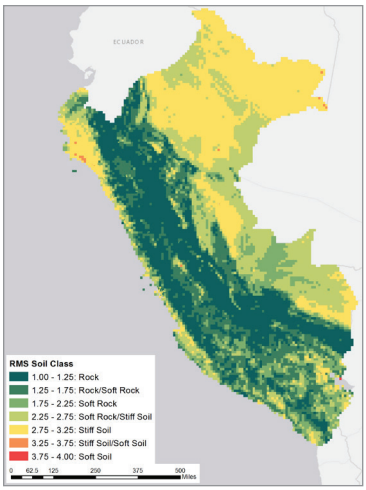
The Peru model can be used as a single country model or as part of a combined South America suite that also includes Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, and Venezuela. Together, the models provide (re)insurers with a tool for understanding and managing earthquake risk in all seismically active countries in the region.

As a testament to the scientific rigor of the Peru model, RMS has been approved by the Peruvian insurance regulator, Superintendencia de Banca, Seguros y AFP (SBS), to offer catastrophe modeling services for national and global insurance companies writing earthquake risk in the country. Firms can only use SBS-approved catastrophe models to calculate their probable maximum loss, average annual loss, and capital reserves.

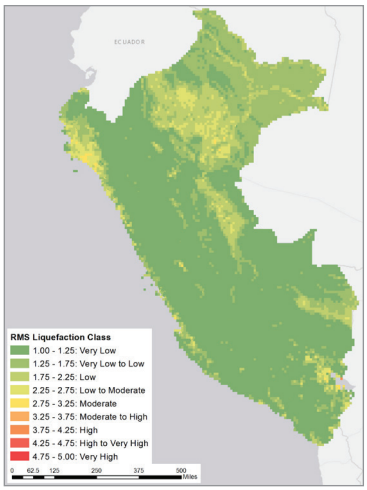
South America-Wide Catalog of Stochastic Events

RMS developed a seamless seismic source model that is integrated within the RMS Central America and South America earthquake models. Because the event set is seamless, all loss-causing events, whether originating in Peru or neighboring countries, are considered during analysis.

The South America-wide catalog consists of more than 134,000 stochastic events. The dominant source of seismicity in Peru is the subduction of the Nazca plate under the South American plate. The seismic source model is based on a comprehensive assessment of different segments of the Nazca Subduction Zone, as well as deep intraslab zones, crustal faults, and crustal background sources, which account for seismicity not associated with specific faults.



RMS soil class values across Peru



RMS liquefaction susceptibility across Peru

Differentiate Risk With Confidence

The Peru model enables users to differentiate risk based on the effects of local site conditions on earthquake ground motions. To support this feature, RMS developed a high-resolution, countrywide database of soil characteristics using 90 m resolution topographic data and geologic maps. Ground motion amplification at a site is determined as a function of multiple parameters, including local site conditions, event source type and magnitude, distance to fault, and peak ground acceleration. Countrywide coverage for liquefaction also is included in the modeled losses.

The model enables risk differentiation based on building characteristics, such as construction class and height, through the incorporation of more than 8,900 Peru-specific vulnerability curves for building and contents damage (not including additional curves for time element coverage). These vulnerability curves were developed considering the unique design and construction practices in Peru and account for the evolution of the building code in the country.

The vulnerability model has been validated against damage and loss reports from key historical events affecting Peru. Where appropriate, RMS also considered data and studies from other countries and incorporated advice from local experts.

Leverage Specialized Models for Industrial Facilities and Aggregate Data

An advanced Industrial Facilities Model can be used to define and analyze the damageability of industrial occupancies reflecting the diversity of these risks in Peru, from oil refineries and pipelines to mining and chemical facilities. RMS also offers an Aggregate Loss Model for users who prefer to run streamlined analyses using aggregate information about building locations and characteristics.

Find Out More

Ask your RMS sales or customer services representative for more information on the RMS Peru Earthquake Model, or email **sales@rms.com**.

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