

RMS India Earthquake Model

Refined Solution for Seismic Risk Assessment and Pricing Across India



KEY FEATURES AND BENEFITS

- Updated seismic source model covering all of India to capture risk correlations
- High-resolution geotechnical information for hazard amplification to differentiate risk
- Country-specific vulnerability functions (>1,000) to maximize use of exposure information, and additional supplementary vulnerability modules:
 - Industrial Facilities Model (IFM)
 - Builders Risk Model (BRM)
- Building inventory database differentiates between rural, suburban, urban, and highly urbanized districts where building characteristics are not fully captured
- Robust financial model assesses losses from a range of financial positions and policy types

Overview

To help (re)insurers safely expand their business in a fast-growing market that is opening up to foreign companies, the RMS® India Earthquake Model identifies the level of earthquake risk for appropriate pricing based on stochastic events and their losses. Insured exposure has been rapidly changing, and model assumptions need to reflect building design and usage, along with insurance practices. The probabilistic risk assessment in the India Earthquake Model is in compliance with the latest exposure information, scientific knowledge, and modeling best practices.

Comprehensive View of Seismic Hazard Across India

The collision of the Indian subcontinent with Asia leads to high earthquake risk in northern India and lower risk zones within the subcontinent. If clients do not correctly assess the diversification and potential risk correlation for rapidly changing exposures across the country, this will negatively impact portfolio accumulations, reinsurance capacity management, capital requirements, and the risk to large accounts. To this end, the RMS India Earthquake Model is designed to re-calculate the seismic risk with updated exposure information to reflect the insured exposure.

More Accurate Risk Differentiation Using Spectral Response-Based Vulnerability

Because building characteristics such as height greatly impact the response to ground shaking and building damage, earthquake losses should be estimated using a spectral response-based approach that considers how diverse frequencies of ground shaking spread during an earthquake. Furthermore, estimated losses are strongly dependent upon local soil conditions that amplify frequencies of ground shaking differently.

The RMS India Earthquake Model accounts for spectral response using the latest ground-motion prediction equations, assessment of local site amplification, and coded building characteristics. These more accurately represent the spatial variations of damage from each event.

SUPPORTED SOLUTIONS

RiskLink®, RiskBrowser®, and Risk Modeler™

- Detailed Loss Model (DLM) accepts high-resolution exposure data for residential, commercial, and industrial lines of business including detailed address information, construction and occupancy descriptions, building height, and year built, for buildings, contents, and time-based risk coverages
- Aggregate Loss Model (ALM) available for aggregate exposure for residential, commercial and industrial lines of business

Client Support

- Global Client Support services ensure continuous availability of knowledgeable support staff, fulfillment and deployment services, RMS experts, and product and industry training
- Access to comprehensive, transparent documentation, including model methodology, model validation, and model change documents
- When a catastrophe occurs, the RMS Event Response Team provides accurate accumulation, modeling, and loss estimation information and guidance to clients and the market

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RMS is the world's leading catastrophe risk modeling company. From earthquakes, hurricanes, and flood to terrorism, agriculture, and infectious diseases, RMS helps financial institutions and public agencies understand, quantify, and manage risk.

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Extended Solutions for Risk Management

Rapid regional urbanization and development produces a wide range of building types and exposures that are considered by the RMS India Earthquake Model. Incorrect pricing and risk management can occur if variations in risk due to exposure type and the earthquake vulnerability of structures is not captured. Over a thousand vulnerability functions are included within the RMS vulnerability module to evaluate losses per coverage type.

RMS provides additional solutions for underwriting key exposures such as industrial facilities, buildings under construction, and marine cargo and specie risks.

The financial model includes additional losses from landslide and liquefaction hazards, and the effects of post-event loss amplification, to reflect the impact of more extreme loss-causing events.

Consistent Approach From Underwriting to Portfolio Management

Limited seismic hazard data is used by many insurers for policy-level underwriting and pricing, but not for portfolio management. The use of RMS products for underwriting and pricing – as well as the India Earthquake Model for portfolio, reinsurance, and solvency management – provides a consistency across decision-making processes, enabling the development of a diversified portfolio while meeting strategic growth objectives.

High-Quality Calibration and Documentation to Meet Regulatory Requirements

RMS has almost 30 years of experience building earthquake models subject to extensive regulatory review. With a strict development process, RMS individually calibrates and validates every model component with extensive quality assessment and acceptance testing processes. This provides consistency between model components and overall losses, along with full transparency for regulatory requirements. RMS documentation also provides important information to clients to ensure they understand model assumptions as part of their validation process and can develop their own view of risk.

Find Out More

Ask your RMS sales or customer services representative for more information on the RMS India Earthquake Model, call +44.20.7444.7600, or email sales@rms.com.