# RMS Australia Earthquake Model

**Provides the Latest View of Seismic Risk Across Australia**

## KEY FEATURES AND BENEFITS

- Accurately locate exposure for risk assessment and accumulation management using the updated geocoding engine
- Model earthquake ground motions using the latest science and understanding from Geoscience Australia and local experts
- Model the potential for hazard amplification at a higher resolution based on the latest data from Geoscience Australia
- Realistically model the local building performance using enhanced vulnerability functions and building inventory based on the latest data and building stock
- Capture the potential for amplified losses with explicit modeling of post-event loss amplification
- More accurate representation of industrial properties and buildings under construction using the updated RMS Industrial Facilities Model (IFM) and new RMS Builders Risk Model, respectively
- Examine portfolio performance against the industry using the Industry Exposure Database (IED) and Industry Loss Curves (ILC)

## Overview

The seismic risk in Australia is not insignificant. While there have not been any damaging earthquakes in Australia in the last decade, the 1989 Newcastle event – a relatively moderate magnitude earthquake – was the costliest in Australian history, causing insured losses of just under A$1 billion.

Earthquakes are broadly considered to be a tail-risk peril. Despite the low probability of notable events in Australia, no area, including major cities, is entirely free of seismic risk. With the release of an update to the RMS® Australia Earthquake Model, customers in the region have access to the most up-to-date view of risk.

## Robust Assessment of National Seismic Hazard

The RMS Australia Earthquake Model reflects the latest scientific view of seismic hazard by incorporating data from the 2018 national seismic hazard map from Geoscience Australia. Updated event rates and ground motion models, combined with insight from local experts, provide the most up-to-date view of seismic risk in the country.

## Incorporating the Lessons Learned From Global Events

Recent events around the world, such as the devastating 2010-2011 Canterbury Earthquake Sequence (CES) in New Zealand, have informed the RMS understanding of seismic risk.

Following the CES, RMS collected a large volume of claims data. This data, combined with lessons learned about building performance, and knowledge of Australian building codes and construction practices was used to update the damage functions in the RMS Australia Earthquake Model. This update enables customers to better capture the vulnerability of their exposure to more accurately model the risk.

## 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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## Risk Differentiation Enabled by Higher-Resolution Data

The RMS Australia Earthquake Model includes updated geotechnical hazard data based on the 2017 site conditions map from Geoscience Australia. The updated map includes higher-resolution data for much of the country, as well as incorporating a weathering index to capture the potential amplification of ground motions.

Since soil conditions can vary significantly over a small area, the higher the resolution of the underlying data, the more precisely the local risk can be captured and differentiated. This understanding can be used to enable better underwriting and pricing decisions.

## New Capabilities: Loss Amplification, Builders Risk, Industry Exposure

The RMS Australia Earthquake Model explicitly captures the effects of post-event loss amplification, where unique economic, social, and operational factors can inflate the overall loss following a significant event. The model also introduces a Builders Risk Model to reflect the vulnerability of buildings under different stages of construction.

In addition, collaboration with the local (re)insurance market has enhanced the development of an Industry Exposure Database (IED), which provides the market with an understanding of the distribution of insured exposure for key lines of business.

## Full Transparency to Meet Regulatory Requirements

With a vigorous development process, RMS individually calibrates and validates every model component with extensive quality assessment and acceptance testing processes. These provide consistency between model components and overall losses and offer full transparency to address all regulatory requirements. The accompanying documentation gives clients the information they need to understand the model assumptions as part of their validation process.

## One of Three Model Updates for Australia and New Zealand

The RMS Australia Earthquake Model release coincides with an update to the RMS Australia Cyclone Model, as well as the recent release of the RMS New Zealand Earthquake HD Model.

The Australia Earthquake Model includes updated geocoding based on the latest geographic information, additional coding options including the introduction of the Australian and New Zealand Standard Industrial Classification (ANZSIC), and new secondary modifiers to align the modeling options across the Australia and New Zealand Earthquake Models, as well as the Australia Cyclone Model.

These updates provide the most comprehensive view of risk across this model suite, as well as consistent coding options for the region, enabling more informed group-level decision-making.

## Find Out More

For more information on the RMS Australia Earthquake Model, ask your RMS sales or customer services representative, call +44.20.7444.7600, or email **sales@rms.com**.