

CEDIM Forensic Disaster Analysis Group (FDA)

Mandalay Earthquake Myanmar 2025

Information as of 28th March 2025, 2 pm CET

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SUMMARY

On March 28, 2025 at 6:20 a.m. UTC, a major earthquake with the magnitude 7.7 occurred near the capital city of Sagaing, Myanmar, at a depth of 10 kilometers. The earthquake was felt across much of Myanmar and in neighboring Bangladesh, India, China, and Thailand. It is estimated that up to 222.4 million people experienced the earthquake. While most experienced only light to moderate ground motion, approximately 8.1 million people live in areas where buildings may be damaged. Particularly at risk are 4.2 million people living in regions of potentially severe destruction. In addition, the long-period ground motion posed a particular threat to tall buildings, even over long distances as in Bangkok.

The earthquake caused massive damage to Myanmar's transportation infrastructure. The two main bridges over the Irrawaddy River near Mandalay collapsed, cutting off key transportation links. Mandalay and Naypyitaw airports were also severely damaged, with parts of the Mandalay terminal collapsing and the Naypyitaw airport tower collapsing. In addition, many roads and bridges are impassable due to landslides and structural damage, hampering rescue and relief efforts. A high number of deaths, injuries and homeless are expected.

The geopolitical situation in Myanmar is expected to further complicate relief efforts. In addition, large parts of the health and electricity sectors are likely to be damaged or out of service, further exacerbating the impact of the disaster. A total of 756 major healthcare facilities were affected. Of these, 99 hospitals and 50 clinics were located in areas of high seismicity and may experience significant operational problems.

This earthquake fits into the long history of very strong earthquakes in this region along the Sagaing Fault. Similar earthquakes were recorded in 1839, 1912 and 1931. The time of day when the earthquake occurred may have helped to reduce the number of casualties, as a nighttime earthquake would have been associated with a significantly higher number of casualties. According to CEDIM model calculations, the estimated average number of victims is around 18,000, with a range between 5,600 and 45,000. Economic losses are estimated to be between \$3 billion and \$8 billion.

| | | | |
|---------------------------------|-------------------|--------------------------|--------------|
| Official Disaster Name | Date / local date | UTC / local time | Local |
| 2025 Mandalay Earthquake | 28-03 | 06:20 UTC / 12:50 | +6:30 |

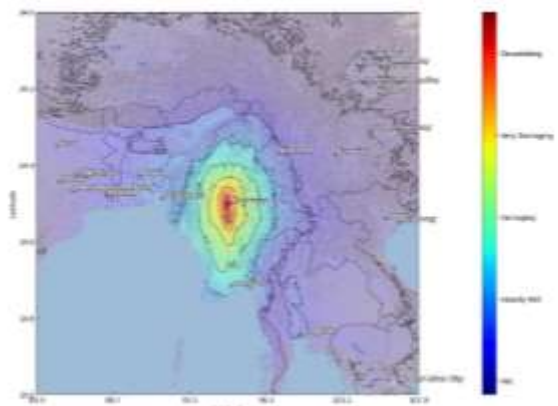
Preferred Hazard Information*

| | | | | | | |
|--------------|--------------|---------------|--------------|--------------------|-------------|---------------|
| EQ_Latitude | EQ_Longitude | Magnitude | Hyp. Depth | Fault Mech. | Source | Spectra |
| 22.01 | 95.92 | 7.7mww | 10 km | Strike-Slip | USGS | Avail. |

Location Information:

| | | | | | |
|-----------------|------------|----------------------|--|---------------|--------------|
| Country | ISO | Dev. Region | Most Impact | Building PF | HDI (2022) |
| Myanmar | MMR | Center, South | Mandalay, Naypidaw, Bago, Yangon, Magwe, Shan | Low | 0.608 |
| Thailand | THA | North | Bangkok | Middle | 0.803 |

Impact Information

| | | | |
|--|------------|----------------|---|
| EMS-98 | MMI | PGA | ShakeMap |
| IX | IX | >1g* |  |
| Hazard Description (Intensity & Ground Motion) <p>Highest intensity and ground motion occurred along the 200km long main rupture starting north of Mandalay to North of Naypidaw. Strong ground motion was felt in most of Myanmar as well as in parts of Bangladesh, India, China and Thailand. Long period ground motion was especially dangerous to skyscrapers also over long distances as in Bangkok.</p> <p>*assumed</p> | | | |

Preferred Social Impact Information:

| | | | | |
|-------------|--------------------------------|-----------------------|--------------------|---------------|
| Type | Median | Accepted Range | Description | Source |
| Deaths | 5603 – 44982 (median=18168) | May rise | | CATDAT |

Loss of Life was primarily associated to the collapse of poorly built residential buildings. The occurrence at day time decreased the likelihood of death and injury.

Preferred Economic Impact

| | | | |
|-------------------|----------|--|-----------------|
| Type | Value | Description | Source |
| Total Loss | \$3-8bn. | Major damage to public infrastructure and residential buildings. Collapsed hospitals, bridges and other critical infrastructure. Collapsed skyscrapers | CATDAT database |

Similar Events

| | | | |
|-------------|------------|-------------|-------------|
| Date | Lat | Lon. | Mag. |
| 1839-03-23 | 21.09 | 96.0 | 8.0 |
| 1912-02-04 | 22.35 | 99.74 | 7.7 |
| 1946-09-12 | 22.35 | 96.24 | 7.3 & 7.7 |

The region is well known for its strong earthquakes along the Sagaing fault.

Further Information:

1. Risklayer/CEDIM-Explorer:
<https://www.risklayer-explorer.com/event/9568/detail>
 2. Live-Ticker: Erdbeben (M7.7) in Myanmar (in German):
<https://erdbebennews.de/2025/03/schweres-erdbeben-m7-7-erschuettert-myanmar/>
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