How Businesses Can Avoid Nonstructural Damage

By mitigating nonstructural hazards now, businesses can protect their employees from injury and prevent damage to valuable property during an earthquake. They can also resume operations more quickly after the earthquake.

Nonstructural elements include the building’s contents and furnishings and its mechanical, electrical, and plumbing components. Even a moderate earthquake can cause these elements to slide, tip over, swing, fall, break, or collapse.

Fortunately, you can do a lot to secure nonstructural elements and avoid potential injuries and damage. The first step is to inventory the business’s nonstructural components and identify potential vulnerabilities. Next, prioritize the hazards and develop a plan: Address first the nonstructural hazards that will have the greatest impact on safety and the business’s critical functions.

See page 2 for more information and resources . . .

Owners and Tenants

Nonstructural elements include inventory, furniture, and equipment, so even a business that occupies leased space can address hazards in the workplace. It is relatively simple to anchor or brace many free-standing objects, such as heavy appliances, tall file cabinets, and computers.

To tackle the building’s nonstructural parts, such as its mechanical and electrical systems, tenants should consult with the building’s owner and an engineer. Owners can mitigate hazards related to these shared systems.
What Can You Do?

- Determine the seismic hazard in your area.
- Learn how to identify nonstructural elements that may be vulnerable to earthquake.
- Conduct a survey of your workplace and create a list of the hazards that you need to address.

Lessons from Chile’s Magnitude 8.8 Quake

Recent earthquakes around the world offer lessons for all those who live and do business in earthquake-prone areas. Chile’s Maule earthquake in 2010 is a case in point: After the quake, engineers documented extensive nonstructural damage in all types of buildings. Nonstructural components that commonly suffered damage included suspended ceilings, partitions, elevators, air handling units, ductwork, and pipes. Unsecured computer monitors, computers, and expensive specialist equipment also fell and broke. At a number of industrial facilities, buildings that were designed to meet new seismic codes performed well during the earthquake, but nonstructural damage caused substantial losses and downtime.

Reduce Your Risk

Begin by developing a prioritized list of nonstructural hazards around the workplace; then develop a plan to address them. Many solutions are easy:

- Anchor tall cabinets and bookcases.
- Anchor or brace the business’s special equipment, machinery, and computers.
- Move the heaviest objects to the lowest shelves and secure breakables.
- Lock storage cabinets or install latches to prevent contents from spilling out.

Top priorities include any elements that might cause injuries, block exits, or result in costly damage or downtime. As you assess your workspace, also consider whether employees have safe places to drop, cover, and hold on during an earthquake: Keep the space under desks and sturdy tables clear.

Featured Links


EERI nonstructural mitigation: [http://mitigation.eeri.org/category/structures/nonstructural-abc-testing](http://mitigation.eeri.org/category/structures/nonstructural-abc-testing)


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