

Protecting Your Property from Earthquakes

Anchor Tall Bookcases and File Cabinets

Are You at Risk?

If you aren't sure whether your house is at risk from earthquakes, check with your local building official, city engineer, or planning and zoning administrator. They can tell you whether you are in an earthquake hazard area. Also, they usually can tell you how to protect yourself and your house and property from earthquakes.

What You Can Do

Earthquake protection can involve a variety of changes to your house and property -- changes that can vary in complexity and cost. You may be able to make some types of changes yourself. But complicated or large-scale changes and those that affect the structure of your house or its electrical wiring and plumbing should be carried out only by a professional contractor licensed to work in your state, county, or city. One example of earthquake protection is anchoring large pieces of furniture, such as bookcases and file cabinets, so that they will remain upright during an earthquake. This is something that many homeowners can probably do on their own.

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During an earthquake, large pieces of furniture such as tall bookcases and file cabinets can fall on you or members of your family. Toppled furniture can also block exits and prevent you from escaping. Anchoring furniture so that it remains upright not only helps prevent injuries but also helps protect both the furniture and its contents.

You can anchor large pieces of furniture in several ways. The figure shows how to anchor a bookcase to a wall, but the same methods can be used for other pieces of furniture. As shown in the figure, a bookcase can be anchored with metal L brackets and screws along its top or sides (either inside or outside) or with screws through its back.

Tips

Keep these points in mind when you anchor large pieces of furniture:

- Make sure that all anchoring screws penetrate not just the wall but the studs behind it as well. Screws embedded only in drywall or plaster will pull out. Regardless of the anchoring method you use, the screws should be long enough to extend at least 2 inches into the wall and studs.
- Before anchoring a bookcase with screws through its back, make sure the back is sturdy enough and that it is securely attached to the sides, top, and bottom. Some bookcases have backs made of very thin materials that are held in place with only small screws or staples that can easily pull out. Those bookcases should be anchored with brackets.
- If you have two or more bookcases or file cabinets that sit next to each other, consider connecting them to one another as well as to the wall. They will be even more stable if you do.
- If possible, move all bookcases, file cabinets, and other large pieces of furniture away from exits so that if they do fall, they won't prevent you from escaping.
- To prevent the contents of your bookcases from falling out, you can install a thin metal or plastic rod, a wood dowel, or even an elastic band across the front of each shelf.

Estimated Cost

The cost of anchoring a bookcase or file cabinet will depend on its width. In general, if you do the work yourself, you can expect the cost to be approximately \$5 per foot. So, for example, anchoring a 3-foot-wide bookcase will cost you about \$15. This amount covers only the hardware you will have to buy and excludes the cost of any tools you use and the value of your time. If you hire a contractor or handyman to do the work, you will have to pay for time as well as materials.

Other Sources of Information

Seismic Retrofit Training for Building Contractors and Building Inspectors: Participant Handbook, FEMA, 1995

Reducing the Risks of Nonstructural Earthquake Damage: A Practical Guide, FEMA-74, 1994

Protecting Your Home and Business from Nonstructural Earthquake Damage, FEMA, 1994

To obtain copies of these and other FEMA documents, call FEMA Publications at **1-800-480-2520**.

Information is also available on the World Wide Web at <http://www.fema.gov>.

