

Earthquake Safety

Conduct your own survey

What to look for

To check your home's earthquake fitness, all you need is a flashlight and a willingness to get a little dirty. The place to start is the crawl space underneath your home.

1. Is your house properly bolted down to its foundation?

The wood 2x4 or 2x6 that rests directly on the foundation is called the "mud sill." Until the 1950s, home builders often did not bolt the mud sills to the foundation. This creates a serious structural weakness that can allow your home to slide off its foundation during an earthquake. The mud sill should be bolted at four to six-foot intervals (as specified on your plans), and a bolt should be located within one foot of every joint or step in the mud sill, but no closer than nine inches to the end of the board. If the mud sill is not bolted, or inadequately bolted, this is a job you can consider doing yourself.

2. Next, examine the cripple walls.

Check to make sure your cripple walls are braced with plywood to resist motion. Even if your cripple walls have cross-bracing, they are not strong enough for earthquakes unless you add plywood. Also a job you can do yourself.

3. Check for faulty materials in the concrete and the wood framing.

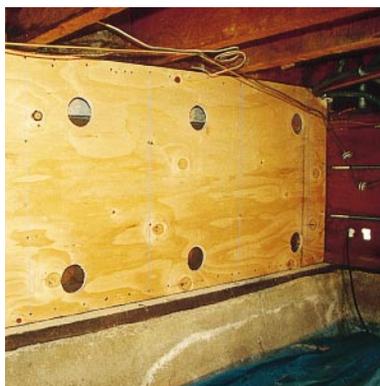
The foundation is a common area of structural weakness, so check your foundation to make sure it's in good condition. Sometimes the concrete used in foundations is too porous and crumbly to provide adequate strength. If so, your home is still subject to earthquake damage, even if you've bolted it down and installed plywood on the cripple walls.

Do you see any obvious evidence in the wood of dry rot or insect damage? If so, you will need to remove and replace the damaged wood. It's a good idea to hire a structural pest control inspector to look for damage not easily seen except by a trained eye.

Bolting your mud sill to the foundation and adding plywood to the cripple walls are the two most cost-effective steps you can take to strengthen your home for earthquakes.



Bolts secure your home's mud sill to the concrete foundation. The mud sill should be bolted at four to six-foot intervals (as specified on your prescriptive plan set).



Sheets of plywood nailed to the cripple walls help to prevent damage from shaking in this typically weak area of your house. Cross-bracing within the framing is not enough.



Faulty materials such as rotten wood and porous concrete should be replaced. Risky conditions in concrete include cracks wider than $\frac{1}{8}$ inch, large voids, or "honeycomb" concrete. If the concrete chips or flakes when you poke it with a screwdriver, it may be unsafe.

NOTE: If you suspect faulty material, you may need the assistance of a licensed engineer or architect to design a solution.