Weak Crawl Space Walls

The Problem

Wooden floors and stud walls are sometimes built on top of an exterior foundation to support a house and create a crawl space. *(See Figure 14, page 10)*

These stud walls carry the weight of the house.

During an earthquake, these walls can collapse if they are not braced to resist horizontal movement.

If the wall fails, the house may shift or fall.

Office of Emergency Services

Figure 12 - Damage to home due to crawl space wall failure.

How to Identify

- ✓ Go under the house through the crawl space, to see if there are any wood stud walls.
- ✓ If there are such walls, check to see if they are braced.
- ✓ There should be plywood panels adequately nailed to the studs OR there should be diagonal wood sheathing. *(See Figure 13)*
- ✓ If you have neither of these, the walls are probably insufficiently braced or unbraced.
- ✓ Horizontal or vertical wood siding is not strong enough to brace these walls.

Remember

- It is very expensive to lift a house, repair these walls, and put it back on its foundation.

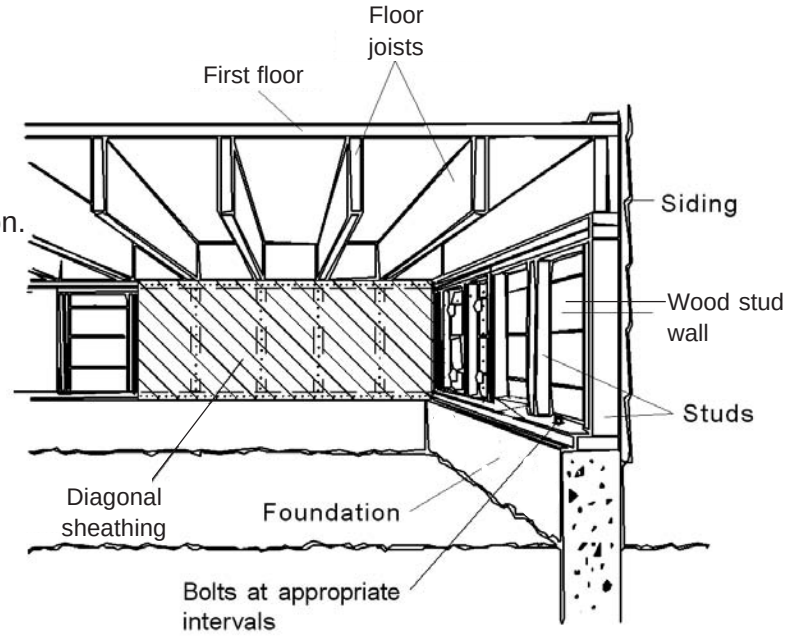


Figure 13 - Diagonal sheathing. Common in older homes.

HOW-TO

Strengthen Foundation Walls

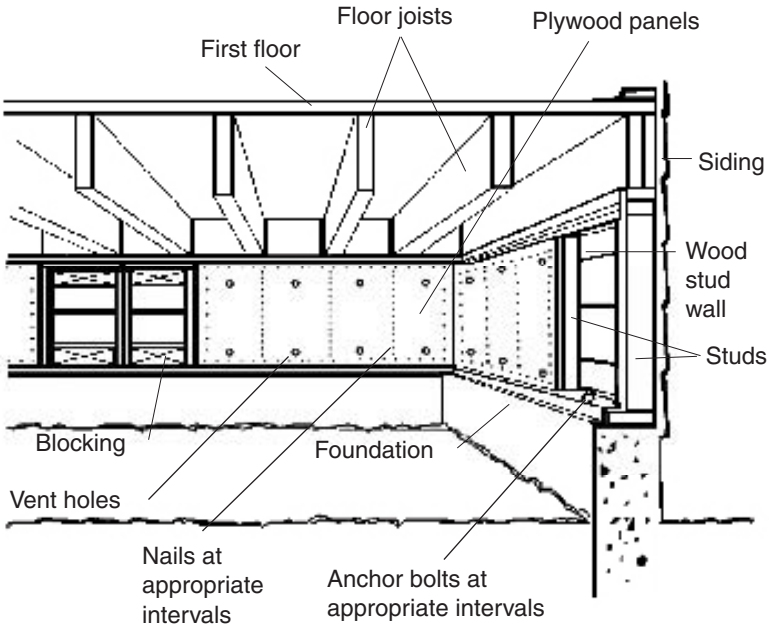
The Solution

Plywood, or other wood products allowed by code, should be nailed to the studs.

The following are important:

- Type of wood product used
- Plywood thickness
- Nail size and spacing
- Not covering vents

Consult your local Building Department for permit requirements before starting work.



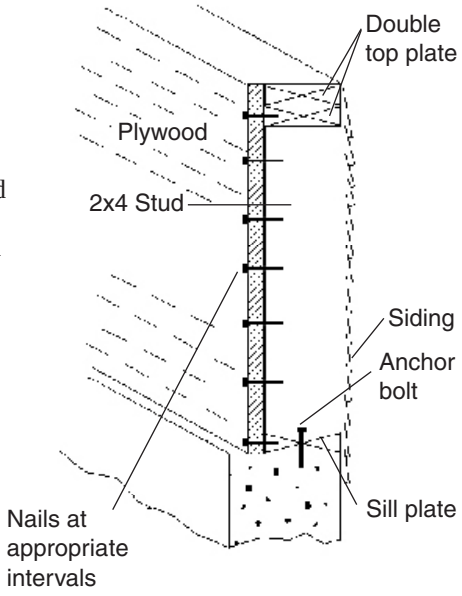


Figure 14 - Plywood or diagonal sheathing strengthens weak wood stud walls. If your home has a wood stud wall between the foundation and the first floor, and the wall is not braced with plywood or diagonal sheathing, the house may fall or shift off its foundation during an earthquake.

How-to Resources

- Detailed information for do-it-yourselfers or engineers can be found in the International Existing Building Code, published by the International Code Council
- Go to www.fema.gov, and under the Earthquake section, search for "Strengthen Foundation Walls" for specific strengthening instructions.

Comparison of Cost: Preventing vs. Repairing Earthquake Damage

Project Cost	Cost to Repair After an Earthquake
$500 to $2,500	$25,000 to total value of home (if completely destroyed)