

Wall Bracing *A Basic Interpretation of the Code*

What Are Braced Walls and Why Are They Needed?

Model building codes IRC 2000/2003/2006 R602.10 and IBC 2000/2003/2006 2308.9.3 require wall bracing in conventional wood light-frame construction.

In wood-frame construction, a braced wall is a designated wall in which the framing members are reinforced to resist the lateral racking forces created by wind or seismic loading.

Braced-wall panels are required near each end of a wall and at least 25 ft. on center (*see Figure 1*). Designated wall bracing must also make up a certain percentage of overall wall length based on several factors including wind requirements, seismic category and method used.

The building codes define eight prescribed ways to build a braced wall ranging from 4 ft. to 8 ft. in length. A few examples are 1x4 continuous let-in bracing, wood structural-panel sheathing (*see Figure 2*) and gypsum board.

Are There Any Alternatives?

Alternate braced-wall panel methods may replace any of the eight prescribed methods at the lower level when wall space constraints exist. Minimum lengths vary depending on alternate method used. In addition, specific requirements for holdowns, mudsill anchors, and minimum sheathing thickness and fastening must be followed. Figure 3 highlights one alternate braced-wall method. Reference model building code for more information.

Braced-wall-panel lengths may be less than 4 ft. depending on size of adjacent opening where continuous wood structural panel sheathing is used.

Are There Any Other Alternatives?

- Redesign your dwelling to meet the wider braced-wall requirements.
- Hire a design professional to provide an engineered solution.
- Use an engineered product that meets the intent of the code while providing a narrow-wall solution such as a Simpson Strong-Tie® Strong Frame™ ordinary moment frame or Strong-Wall® shearwall (steel or wood).

The building codes give Building Officials the authority to approve alternate materials, design and method of construction that complies with the intent of the provisions of the code and is at least the equivalent of that prescribed in the code.

Figure 1: Braced-Wall Panel Spacing

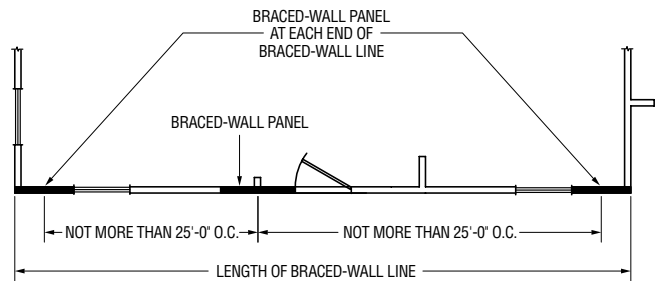


Figure 2: Braced-Wall Panel Method Examples

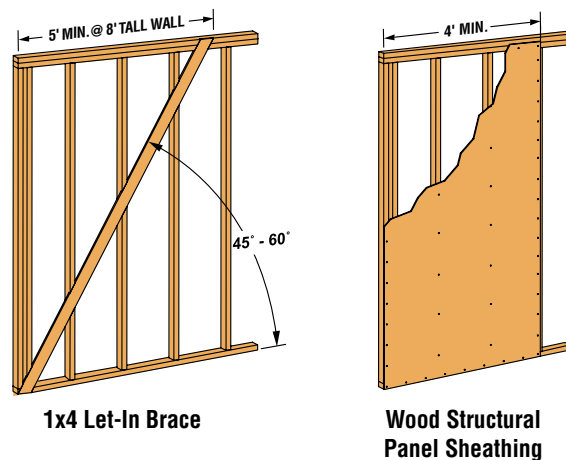
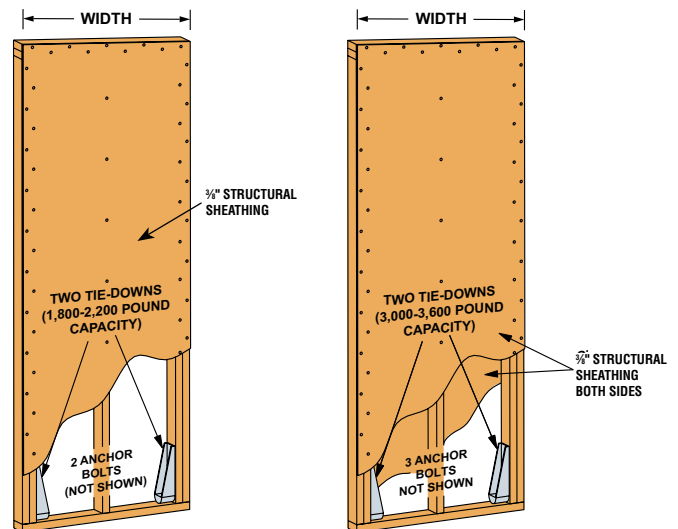


Figure 3: Alternative Braced-Wall Panels < 4' Wide

- 8d Nails @ 6" O.C. (Edges, Single Story)
- 8d Nails @ 4" O.C. (Edges, Lower of Two Story)
- 8d Nails @ 12" O.C. (Intermediate Supports)



Single-Story Alternate Braced Wall Method

Lower of Two-Story Alternate Braced Wall Method

Minimum width range from 2'-4" to 3'-6", reference model building codes for width and tie-down requirements