

# **WALL BRACING REQUIREMENTS**

## **City of Wadsworth Building Department**

All exterior walls must be braced to resist imposed lateral loads in accordance with the 2006 Residential Code of Ohio. Panels adjacent to garage door openings, walls with numerous window and door openings must be designed to resist these forces. The methods of construction on this page are considered to meet these requirements. See [www.apawood.org/bracing](http://www.apawood.org/bracing) and the Simpson "Narrow Wall Bracing Solutions" bulletin and [www.strongtie.com](http://www.strongtie.com) for details of other approved bracing methods and tie down information. Walls that are not built to any of these specifications require an engineered design.

**"Sheathing"** shall include plywood, OSB, approved structural sheathings, and structural fiberboard attached 16" o.c.

**"Continuously Sheathed"** wall has all framing components - studs, plates, headers and rims of floor assemblies are covered by Wood Structural Panel sheathing ( includes plywood and OSB).

### **GENERAL REQUIREMENTS FOR 8' WALLS:**

#### **One Story Walls:**

Each End: 48" sheathed panels, 1x4 let in bracing, or 96" panels of ½ " gypsum board, and other methods listed in Section R602.10, beginning not more than 12.5' from wall ends, and not more than 25' o.c. apart are required. The total combined width of braced panels must be 16% of the total wall length. The sole plate must be attached by 3-16d nails 16" o.c.

#### **First Story of Two Story / Second of Three Story, or Garage with Room Above**

Same as 1 story + bracing other than Structural Sheathing Panels must comprise 25% of the braced wall line.

#### **First of Three Story Bracing Additional Requirements:**

Same as 1 story + Structural Sheathing Panels must comprise 25% of the braced wall line.

Bracing *other than* Structural Sheathing Panels must comprise 35% of the braced wall line.

### **ALTERNATELY BRACED PANELS WIDTHS FOR WALLS NOT CONTINUOUSLY SHEATHED:**

#### **One Story Dwelling or Garage 8'-10' Walls –**

**2'8"** Wood Structural Panels are acceptable if beginning 12.5' from wall ends; not more than 25' o.c.; *and* the total combined width of braced panels is 16% of the total wall length *and* they have approved 1800lb. tie -down straps, or ½" anchor bolts with 2"x2"x3/16" washers, installed on each end of the panel.

#### **First Story of Two Story Dwellings or Garage with Living Space Above**

**2'8"** Wood Structural Panels are acceptable if installed as for 1 story, and sheathing is also applied to the interior face of the wall; *and* they have approved 3000lb. rated tie down strap on the end studs, or 2, ½" anchor bolts with 2"x2"x3/16" washers installed on each panel.

### **PORTAL FRAME WALLS:**

#### **One Story Dwelling or Garage -10' Walls**

**16"** Panels are acceptable if ends are tied down with 1800lb. tie-down straps, or ½" anchor bolts with 2"x2"x3/16" washers, installed on each end of the panel. The header must extend to a stud in the braced panel 16" past the opening. The header must extend on both sides if the opening + braced panels comprise the entire wall, such as a garage or patio door. Wall sheathing must extend un-broken over header. 1000 lb. rated straps must tie the header to the studs on the interior.

#### **First of 2 Story Dwelling or Garage -10' Walls**

**24"** Panels are acceptable, installed as above, except that header must extend 24" past the opening.

### **CONTINUOUSLY SHEATHED WALLS:**

| ***Fully Sheathed Houses Minimum Width of Braced Panel  |     |     |     | **Max. Opening Height Next to Panel |     |      |      |
|---|-----|-----|-----|-------------------------------------|-----|------|------|
| *Wall Height  | 8'  | 9'  | 10' |                                     | 8'  | 9'   | 10'  |
| Residential Code of Ohio-R 602.10   | 48" | 54" | 60" | 100%                                | 96" | 108" | 120" |
|   | 32" | 36" | 40" | 85%                                 | 82" | 92"  | 102" |
|   | 24" | 27" | 30" | 65%                                 | 62" | 70"  | 78"  |
| APA Narrow Wall Method – 1 Story  | 16" | 18" | 20" | Up to Bottom of Header              |     |      |      |
| APA Narrow Wall Method – 2 Story  | 24" | 27" | 30" | Up to Bottom of Header              |     |      |      |
| *Wall Height is Bottom of Sill Plate to Top of Header   |     |     |     |                                     |     |      |      |
| **Full height sheathed walls to either side of garage openings that support light frame roofs only shall be permitted to have a 4:1 aspect ratio. |     |     |     |                                     |     |      |      |

\*\*\*Bracing shall be not more than 12.5' from wall ends, and not more than 25' o.c. apart. The total combined width of braced panels must be 16% of the total wall length. Additional tie downs are not required when the wall is Continuously Sheathed.

### **PANELS LESS THAN 16" REQUIRE AN ENGINEERED DESIGN OR AN APPROVED PRODUCT SUCH AS**

**"SIMPSON STRONG WALL" (SEE THE SIMPSON "NARROW WALL BRACING SOLUTIONS" BULLETIN).**