Section 2308 Conventional Light-Frame Construction

2308.1 General

The requirements of this section are intended for *conventional light-frame construction*. Other construction methods are permitted to be used, provided that a satisfactory design is submitted showing compliance with other provisions of this code. Interior nonload-bearing partitions, ceilings and curtain walls of *conventional light-frame construction* are not subject to the limitations of Section 2308.2. Detached one- and two-family dwellings and townhouses not more than three *stories above grade plane* in height with a separate means of egress and their accessory structures shall comply with the *International Residential Code*.

2308.1.1 Portions Exceeding Limitations of Conventional Light-Frame Construction

Where portions of a building of otherwise *conventional light-frame construction* exceed the limits of Section 2308.2, those portions and the supporting load path shall be designed in accordance with accepted engineering practice and the provisions of this code. For the purposes of this section, the term "portions" shall mean parts of buildings containing volume and area such as a room or a series of rooms. The extent of such design need only demonstrate compliance of the nonconventional light-framed elements with other applicable provisions of this code and shall be compatible with the performance of the conventional light-framed system.

2308.1.2 Connections and Fasteners

Connectors and fasteners used in conventional construction shall comply with the requirements of Section 2304.10.

2308.2 Limitations

ILLUSTRATION

Buildings are permitted to be constructed in accordance with the provisions of *conventional light-frame construction*, subject to the limitations in Sections 2308.2.1 through 2308.2.6.

2308.2.1 Stories

Structures of *conventional light-frame construction* shall be limited in story height in accordance with Table 2308.2.1.

TABLE 2308.2.1

ALLOWABLE STORY HEIGHT

SEISMIC DESIGN CATEGORY	ALLOWABLE STORY ABOVE GRADE PLANE
A and B	Three stories
C	Two stories
D and E[a]	One story

For SI: 1 inch = 25.4 mm.

a. For the purposes of this section, for buildings assigned to Seismic Design Category D or E, cripple walls shall be considered to be a story unless cripple walls are solid blocked and do not exceed 14 inches in height.

2308.2.2 Allowable Floor-To-Floor Height

Maximum floor-to-floor height shall not exceed 11 feet, 7 inches (3531 mm). Exterior bearing wall and interior braced wall heights shall not exceed a stud height of 10 feet (3048 mm).

2308.2.3 Allowable Loads

ILLUSTRATION

Loads shall be in accordance with Chapter 16 and shall not exceed the following:

1. Average dead loads shall not exceed 15 psf (718 N/m^2) for combined roof and ceiling, exterior walls, floors and partitions.

   Exceptions:

   1. Subject to the limitations of Section 2308.6.10, stone or masonry veneer up to the lesser of 5 inches (127 mm) thick or 50 psf (2395 N/m^2) and installed in accordance with Chapter 14 is permitted to a height of 30 feet (9144 mm) above a noncombustible foundation, with an additional 8 feet (2438 mm) permitted for gable ends.
   2. Concrete or masonry fireplaces, heaters and chimneys shall be permitted in accordance with the provisions of this code.

2. Live loads shall not exceed 40 psf (1916 N/m^2) for floors.

   Exception: Live loads for concrete slab-on-ground floors in Risk Categories I and II shall be not more than 125 psf.

3. Ground snow loads shall not exceed 50 psf (2395 N/m^2).

2308.2.4 Basic Wind Speed

V shall not exceed 130 miles per hour (57 m/s) (3-second gust).

Exceptions:

1. *V* shall not exceed 140 mph (61.6 m/s) (3-second gust) for buildings in Exposure Category B that are not located in a *hurricane-prone region*.
2. Where *V* exceeds 130 mph (3-second gust), the provisions of either AWC WFCM or ICC 600 are permitted to be used.

2308.2.5 Allowable Roof Span

Ceiling joist and rafter framing constructed in accordance with Section 2308.7 and trusses shall not span more than 40 feet (12 192 mm) between points of vertical support. A ridge board in accordance with Section 2308.7 or 2308.7.3.1 shall not be considered a vertical support.

2308.2.6 Risk Category Limitation

The use of the provisions for *conventional light-frame construction* in this section shall not be permitted for *Risk Category* IV buildings assigned to *Seismic Design Category* B, C, D or F.

2308.3 Foundations and Footings

Foundations and footings shall be designed and constructed in accordance with Chapter 18. Connections to foundations and footings shall comply with this section.

2308.3.1 Foundation Plates or Sills

ILLUSTRATION

Foundation plates or sills resting on concrete or masonry foundations shall comply with Section 2304.3.1. Foundation plates or sills shall be bolted or anchored to the foundation with not less than $^{1}/_{2}$-inch-diameter (12.7 mm) steel bolts or *approved* anchors spaced to provide equivalent anchorage as the steel bolts. Bolts shall be embedded not less than 7 inches (178 mm) into concrete or masonry. The bolts shall be located in the middle third of the width of the plate. Bolts shall be spaced not more than 6 feet (1829 mm) on

center and there shall be not less than two bolts or anchor straps per piece with one bolt or anchor strap located not more than 12 inches (305 mm) or less than 4 inches (102 mm) from each end of each piece. Bolts in sill plates of braced wall lines in structures over two stories above grade shall be spaced not more than 4 feet (1219 mm) on center. A properly sized nut and washer shall be tightened on each bolt to the plate.

2308.3.1.1 Braced Wall Line Sill Plate Anchorage in Seismic Design Category D

ILLUSTRATION

Sill plates along *braced wall lines* in buildings assigned to *Seismic Design Category* D shall be anchored with not less than $^{1}/_{2}$-inch (12.7 mm) diameter anchor bolts with steel plate washers between the foundation sill plate and the nut, or approved anchor straps load-rated in accordance with Section 2304.10.3 and spaced to provide equivalent anchorage. Plate washers shall be not less than 0.229 inch by 3 inches by 3 inches (5.82 mm by 76 mm by 76 mm) in size. The hole in the plate washer is permitted to be diagonally slotted with a width of up to $^{3}/_{16}$ inch (4.76 mm) larger than the bolt diameter and a slot length not to exceed $1^{3}/_{4}$ inches (44 mm), provided that a standard cut washer is placed between the plate washer and the nut.

2308.3.1.2 Braced Wall Line Sill Plate Anchorage in Seismic Design Category E

ILLUSTRATION

Sill plates along braced wall lines in buildings assigned to Seismic Design Category E shall be anchored with not less than $^{5}/_{8}$-inch diameter (15.9 mm) anchor bolts with steel plate washers between the foundation sill plate and the nut, or approved anchor straps load-rated in accordance with Section 2304.10.3 and spaced to provide equivalent anchorage. Plate washers shall be not less than 0.229 inch by 3 inches by 3 inches (5.82 mm by 76 mm by 76 mm) in size. The hole in the plate washer is permitted to be diagonally slotted with a width of up to $^{3}/_{16}$ inch (4.76 mm) larger than the bolt diameter

and a slot length not to exceed $1\frac{3}{4}$ inches (44 mm), provided that a standard cut washer is placed between the plate washer and the nut.

2308.4 Floor Framing

Floor framing shall comply with this section.

2308.4.1 Girders

Girders for single-story construction or girders supporting loads from a single floor shall be not less than 4 inches by 6 inches (102 mm by 152 mm) for spans 6 feet (1829 mm) or less, provided that girders are spaced not more than 8 feet (2438 mm) on center. Other girders shall be designed to support the loads specified in this code. Girder end joints shall occur over supports.

Where a girder is spliced over a support, an adequate tie shall be provided. The ends of beams or girders supported on masonry or concrete shall not have less than 3 inches (76 mm) of bearing.

SEE MORE

Related Code Sections

Section 2308 Wood, Conventional Light-Frame Construction

The requirements of this section are intended for **conventional light-frame construction** . Other **construction** methods are permitted to be used ...

2308.2 Wood, Limitations

Buildings are permitted to be **constructed** in accordance with the provisions of **conventional light-frame construction** , subject to the limitations ...

2308.3 Wood, Foundations and Footings

Foundations and footings shall be designed and **constructed** in accordance with Chapter 18. Connections to foundations and footings shall comply ...

2308.6 Wood, Wall Bracing

2308.6.3 for full description of bracing methods. For Method GB, gypsum wallboard applied to **framing** supports that are spaced at 16 inches on center. The ...

2308.8 Wood, Design of Elements

conventional construction contains structural elements exceeding the limits of Section 2308.2, these elements and the supporting load path shall ...