

## Section 9.17. Columns

### 9.17.1. Scope

#### 9.17.1.1. Application

- 1) This Section applies to columns used to support
  - a) beams carrying loads from not more than 2 wood-frame floors where
    - i) the supported length of joists bearing on such beams does not exceed 5 m, and
    - ii) the *live load* on any floor does not exceed 2.4 kPa (see Table 4.1.5.3.),
  - b) beams or header joists carrying loads from not more than 2 levels of wood-frame balconies, decks or other accessible exterior platforms, or 1 level plus the roof, where
    - i) the supported length of joists bearing on such beams or joists does not exceed 5 m,
    - ii) the sum of the specified snow and *occupancy* loads does not exceed 4.8 kPa (see Sentence 9.4.2.3.(1) for the determination of load on platform-type constructions), and
    - iii) the platform serves only a single *suite* of *residential occupancy*, or
  - c) carport roofs (see Section 9.35.).
- 2) Columns for applications other than as described in Sentence (1) shall be designed in accordance with Part 4.

### 9.17.2. General

#### 9.17.2.1. Location

- 1) Columns shall be centrally located on a footing conforming to Section 9.15.

#### 9.17.2.2. Lateral Support

- 1) Columns shall be securely fastened to the supported member to reduce the likelihood of lateral differential movement between the column and the supported member. (See also Article 9.23.6.2.)
- 2) Except as permitted by Sentence (3), columns shall be laterally supported to resist racking
  - a) directly, or
  - b) by connection to the supported members.(See Note A-9.17.2.2.(2).)
- 3) Columns need not be provided with lateral support as described in Sentence (2), where
  - a) the distance from finished ground to the underside of the joists is not more than 600 mm, and
  - b) the columns support a deck with no superstructure.

### 9.17.3. Steel Columns

#### 9.17.3.1. Size and Thickness

- 1) Except as permitted in Sentence (2), steel pipe columns shall have an outside diameter of not less than 73 mm and a wall thickness of not less than 4.76 mm.
- 2) Columns of sizes other than as specified in Sentence (1) are permitted to be used where the *loadbearing* capacities are shown to be adequate.

#### 9.17.3.2. End Bearing Plates

- 1) Except as permitted in Sentence (2), steel columns shall be fitted with not less than 100 mm by 100 mm by 6.35 mm thick steel plates at each end, and where the column supports a wooden beam, the top plate shall extend across the full width of the beam.
- 2) The top plate required in Sentence (1) need not be provided where a column supports a steel beam and provision is made for the attachment of the column to the beam.

**9.17.3.3. Paint**

- 1) Exterior steel columns shall be treated on the outside surface with at least one coat of rust-inhibitive paint.

**9.17.3.4. Design of Steel Columns**

(See Note A-9.17.3.4.)

- 1) Where the imposed load does not exceed 36 kN, adjustable steel columns shall conform to CAN/CGSB-7.2, “Adjustable Steel Columns.”
- 2) Steel columns other than those described in Sentence (1) shall be designed in accordance with Part 4.

**9.17.4. Wood Columns****9.17.4.1. Column Sizes**

- 1) The width or diameter of a wood column shall be not less than the width of the supported member.
- 2) Except as provided in Article 9.35.4.2., columns shall be not less than 184 mm for round columns and 140 mm by 140 mm for rectangular columns, unless calculations are provided to show that lesser sizes are adequate.

**9.17.4.2. Materials**

- 1) Wood columns shall be either solid, glued-laminated or built-up.
- 2) Built-up columns shall consist of not less than 38 mm thick full-length members
  - a) bolted together with not less than 9.52 mm diam bolts spaced not more than 450 mm o.c., or
  - b) nailed together with not less than 76 mm nails spaced not more than 300 mm o.c.
- 3) Glued-laminated columns shall conform to Section 4.3.

**9.17.4.3. Columns in Contact with Concrete**

- 1) Wood columns shall be separated from concrete in contact with the ground by 0.05 mm polyethylene film or Type S roll roofing.

**9.17.5. Unit Masonry Columns****9.17.5.1. Materials**

- 1) Unit masonry columns shall be built of masonry units
  - a) conforming to CSA A165.1, “Concrete Block Masonry Units,” and
  - b) having a compressive strength over the net area of the block of not less than 15 MPa.

**9.17.5.2. Sizes**

- 1) Unit masonry columns shall be not less than 290 mm by 290 mm or 240 mm by 380 mm in size.

**9.17.6. Solid Concrete Columns****9.17.6.1. Materials**

- 1) Concrete shall conform to Section 9.3.

**9.17.6.2. Sizes**

- 1) Concrete columns shall be not less than 200 mm by 200 mm for rectangular columns and 230 mm diam for circular columns.