

## Section 4.3. Design Requirements for Structural Materials

### 4.3.1. Wood

#### 4.3.1.1. Design Basis for Wood

1) Except as provided in Sentence (2), *buildings* and their structural members made of wood shall conform to CSA O86, “Engineering Design in Wood,” incorporating Update 1 to the original 2014 Standard.

Rev.  
12715

(See also the applicable row in Table 1.3.1.2.)

2) *Buildings* or parts of *buildings* of *encapsulated mass timber construction* and their structural members made of wood shall conform to CSA O86, “Engineering Design in Wood.” (See also the applicable row in Table 1.3.1.2.)

#### 4.3.1.2. Glued-Laminated Members

1) Glued-laminated members shall be fabricated in plants conforming to CSA O177, “Qualification Code for Manufacturers of Structural Glued-Laminated Timber.”

#### 4.3.1.3. Termites

1) In areas known to be infested by termites, the requirements in Articles 9.3.2.9., 9.12.1.1. and 9.15.5.1. shall apply.

### 4.3.2. Plain and Reinforced Masonry

#### 4.3.2.1. Design Basis for Plain and Reinforced Masonry

1) *Buildings* and their structural members made of plain and reinforced masonry shall conform to CSA S304, “Design of Masonry Structures.”

### 4.3.3. Plain, Reinforced and Pre-stressed Concrete

#### 4.3.3.1. Design Basis for Plain, Reinforced and Pre-stressed Concrete

1) *Buildings* and their structural members made of plain, reinforced and pre-stressed concrete shall conform to CSA A23.3, “Design of Concrete Structures.” (See Note A-4.3.3.1.(1).)

### 4.3.4. Steel

#### 4.3.4.1. Design Basis for Structural Steel

1) *Buildings* and their structural members made of structural steel shall conform to CSA S16, “Design of Steel Structures.” (See Note A-4.3.4.1.(1).)

#### 4.3.4.2. Design Basis for Cold-Formed Steel

1) *Buildings* and their structural members made of cold-formed steel shall conform to CSA S136, “North American Specification for the Design of Cold-Formed Steel Structural Members.” (See Note A-4.3.4.2.(1).)

#### 4.3.4.3. Steel Building Systems

1) Steel *building* systems shall be manufactured by companies certified in accordance with the requirements of CSA A660, “Certification of Manufacturers of Steel Building Systems.”

### 4.3.5. Aluminum

#### 4.3.5.1. Design Basis for Aluminum

1) *Buildings* and their structural members made of aluminum shall conform to CAN/CSA-S157/S157.1, “Strength Design in Aluminum/Commentary on CSA S157-05, Strength Design in Aluminum,” using the loads stipulated in Section 4.1., in accordance with limit states design in Subsection 4.1.3.

## **4.3.6. Glass**

### **4.3.6.1. Design Basis for Glass**

- 1)** Glass used in *buildings* shall be designed in conformance with
    - a) CAN/CGSB-12.20-M, “Structural Design of Glass for Buildings,” using an adjustment factor on the wind load,  $W$ , of not less than 0.75, or
    - b) ASTM E1300, “Standard Practice for Determining Load Resistance of Glass in Buildings,” using an adjustment factor on the wind load,  $W$ , of not less than 1.0.
- (See Note A-4.3.6.1.(1).)