

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. (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 E 1300, “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).)