

Issue Update

Mid-Rise Wood-Frame Residential Construction - Update

BC Building Code provisions which increase the maximum building height for mid-rise wood-frame residential construction from four to six storeys take effect on April 6, 2009.

In addition to the changes we advised members of in our January Issue Update recent analyses by structural engineers in B.C. have led to an additional amendment to the seismic design requirements. This amendment also comes into effect on April 6, 2009:

To introduce a lower limit on the seismic design force level specifically for 5-and 6-storey wood-frame buildings:

Add 4.1.8.11.(11)

Where the fundamental lateral period, T_a , is determined by 4.1.8.11.(3) (d) for *buildings* constructed with 5 or 6 storeys of continuous *combustible* construction as permitted by Article 3.2.2.45. and having an SFRS of nailed shear walls with wood-based panels, the lateral earthquake force, V , as determined in Sentence (2) shall be multiplied by 1.2.

Amend 4.1.8.12.(6)

Except as required by Sentence (7) or (10), if the base shear, V_d , obtained in Sentence (5) is less than 80% of the lateral earthquake design force, V , of Article 4.1.8.11., V_d shall be taken as $0.8V$.

Add 4.1.8.12.(10)

The base shear V_d shall be taken as 100% of the lateral earthquake design force, V , as determined by Article 4.1.8.11. for *buildings*

- a. constructed with 5 or 6 storeys of continuous *combustible* construction as permitted by Article 3.2.2.45.,
- b. having an SFRS of nailed shear walls with wood-based panels, and
- c. having a fundamental lateral period, T_a , as determined by 4.1.8.11.(3).(d).

Rationale

The change reduces the risk of soft-storey seismic behaviour (building collapse) by restricting seismic design force levels specifically for 5- and 6-storey wood-frame buildings.

The new BC Building Code provisions can be viewed on this website:
http://www.housing.gov.bc.ca/building/wood_frame/