

CODE

(d) If the effect of F is not permanent but, when present, counteracts the primary load, F shall not be included in Eq. (5.3.1a) through (5.3.1g).

5.3.8 If lateral earth pressure H is present, it shall be included in the load combination equations of 5.3.1 in accordance with (a), (b), or (c):

- (a) If H acts alone or adds to the primary load effect, it shall be included with a load factor of 1.6.
- (b) If the effect of H is permanent and counteracts the primary load effect, it shall be included with a load factor of 0.9.
- (c) If the effect of H is not permanent but, when present, counteracts the primary load effect, H shall not be included.

5.3.9 If a structure is in a flood zone, the flood loads and the appropriate load factors and combinations of ASCE/SEI 7 shall be used.

5.3.10 If a structure is subjected to forces from atmospheric ice loads, the ice loads and the appropriate load factors and combinations of ASCE/SEI 7 shall be used.

5.3.11 Required strength U shall include internal load effects due to reactions induced by prestressing with a load factor of 1.0.

5.3.12 For post-tensioned anchorage zone design, a load factor of 1.2 shall be applied to the maximum prestressing reinforcement jacking force.

5.3.13 Load factors for the effects of prestressing used with the strut-and-tie method shall be included in the load combination equations of 5.3.1 in accordance with (a) or (b):

- (a) A load factor of 1.2 shall be applied to the prestressing effects where the prestressing effects increase the net force in struts or ties.
- (b) A load factor of 0.9 shall be applied to the prestressing effects where the prestressing effects reduce the net force in struts or ties.

COMMENTARY

R5.3.8 The required load factors for lateral pressures from soil, water in soil, and other materials, reflect their variability and the possibility that the materials may be removed. The commentary of ASCE/SEI 7 includes additional useful discussion pertaining to load factors for H .

R5.3.9 Areas subject to flooding are defined by flood hazard maps, usually maintained by local governmental jurisdictions.

R5.3.10 Ice buildup on a structural member increases the applied load and the projected area exposed to wind. ASCE/SEI 7 provides maps of probable ice thicknesses due to freezing rain, with concurrent 3-second gust speeds, for a 50-year return period.

R5.3.11 For statically indeterminate structures, the internal load effects due to reactions induced by prestressing forces, sometimes referred to as secondary moments, can be significant (Bondy 2003; Lin and Thornton 1972; Collins and Mitchell 1997).

R5.3.12 The load factor of 1.2 applied to the maximum tendon jacking force results in a design load of about 113 percent of the specified prestressing reinforcement yield strength, but not more than 96 percent of the nominal tensile strength of the prestressing reinforcement. This compares well with the maximum anchorage capacity, which is at least 95 percent of the nominal tensile strength of the prestressing reinforcement.