



South Carolina Building Codes Council

PO Box 11329
Columbia, SC 29211-1329

Request for Statewide Code Modification

Jurisdiction or Organization: Building Officials Association of SC

Representative: Curt Whaley Title: Member

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Signature: *Buddy Skinner* Date: 5/24/18

Code: South Carolina Building Code (IBC) Edition: 2018 Section: 1803.2

Check One: Delete and substitute the following Delete without substitution Add the following Modify the following
Type or print proposed modification. Use additional pages if necessary. Underline New language. Line-Through Deleted Language.

1803.2 Investigations Required. Geotechnical investigations shall be conducted in accordance with Sections 1803.3 through 1803.5

Exception:

1. The *building official* shall be permitted to waive the requirement for a geotechnical investigation where satisfactory data from adjacent areas is available that demonstrates an investigation is not necessary for any of the conditions in Sections 1803.5.1 through 1803.5.6 and Sections 1803.5.10 and 1803.5.11.

2. For single story buildings not more than 5,000 sq ft and not more than 30 ft in height a site specific investigation report is not required. The seismic design category may be determined by the design professional in accordance with Chapter 20 of ASCE 7.

Reason: Unusually Restrictive Impractical Threat to Human Injury or Life Safety

Type or print the reason for the proposed modification. Use additional pages if necessary.

The International Building Code requires a geotechnical investigation for all projects regardless of size. The only exception which allows the building official to waive the requirements puts unnecessary liability on the building official to determine if adequate information can be gathered from adjacent sites. In areas that must account for seismic activity the conditions may vary in as few as 100 yards. For large commercial projects the soil conditions may have a drastic effect on the design of the structure; however, for smaller projects the soil condition has significantly less bearing on the design. It is often determined on small projects that the soil conditions do not have an effect on the design of the structure. (ASCE 7 20.3.1 EXCEPTION: For structures having fundamental periods of vibration equal to or less than 0.5 s, site-response analysis is not required to determine spectral accelerations for liquefiable soils. Rather, a site class is permitted to be determined in accordance with Section 20.3 and the corresponding values of F_v and F_h , determined from Tables 11.4-1 and 11.4-2.) As an example we can use a building with a height of 30ft. Using the calculation as detailed in ASCE7 Section 12.8.2.1 the Fundamental Period of Vibration would be $T_a=0.028(30^{0.8})$ and $T_a=0.43$ for buildings with steel moment-resisting frames. All other structural systems that do not have specific values in ASCE7 Table 12.8-2 would be calculated as follows: $T_a=0.02(30^{0.75})$ and result in a fundamental period of $T_a=0.2564$. Using a different calculation for concrete or steel moment resisting frames with an average story height of 10ft would be the equation $T_a=0.1(4)$ resulting in a fundamental period of $T_a=0.4$ for a 4 story building. Each of these equations results in a period of vibration of less than 0.5 seconds and exceeds the size of a typical one story structure.