



BUILDING BULLETIN 16-01

Subject to reevaluation no later than next code adoption

Subject: Geotechnical Investigations
Code: 2016 California Building Code
Section: 1803.5.12

Date: January 1, 2017

Section 1803.5.12 requires a geotechnical investigation where the structure is determined to be in Seismic Design Category D through F. This includes all of Kern County. This section identifies several parameters that must be assessed within the investigation, including the peak ground acceleration, the determination of dynamic seismic lateral earth pressures on foundation walls and retaining walls supporting more than 6 feet of backfill height, and the potential for liquefaction and soil strength loss evaluated for site peak ground acceleration.

Reason for policy:

Section 1803.5.12 requires a geotechnical investigation for every structure within Kern County where an existing investigation is not available. The issues of concern identified in 1803.5.12 are not known to exist in many areas of the county, and requiring an investigation for certain structures in those areas would provide little or no benefit.

Policy:

Unless otherwise required by the building official, exceptions to Section 1803.5.12 will be considered as follows:

Exceptions:

1. A geotechnical investigation may not be required if all of the following conditions are met:
 - a) The structure is determined to be in Seismic Design Category D
 - b) The structure is considered to be in Risk Category I or II per CBC Table 1604.5.
 - c) Basement and/or foundation walls do not retain over four (4) feet.
 - d) The structure is one story, wood or metal frame and does not exceed 4,000 square feet in floor area.
 - e) The assumed allowable soil bearing pressure does not exceed 1,500 psf, the maximum allowable lateral bearing pressure does not exceed 150 psf/ft, and the assumed lateral soil load (Active pressure) is not less than 45 psf/ft.
2. A geotechnical investigation may not be required for retaining walls not exceeding six (6) feet in height measured from the top of the footing, and not supporting a surcharge. The assumed design lateral soil load shall be that for silty sands per CBC Table 1610.1 (Active pressure of 45 psf/ft, At-rest pressure of 60 psf/ft). Back fill slope shall not be steeper than two units horizontal to one unit vertical (2:1).
3. A geotechnical investigation may not be required for additions or alterations to structures in Risk Category I or II per CBC Table 1604.5 when the floor area of an existing structure is not increased by more than 1,000 square feet and not more than two (2) stories in height.
4. A geotechnical investigation may not be required for minor Group U occupancies such as tanks, towers, pipe racks, agricultural buildings, etc, when the assumed allowable soil bearing pressure does not exceed 1,500 psf, the maximum allowable lateral bearing pressure does not exceed 150 psf/ft, and the assumed lateral soil load (active pressure) is not less than 45 psf/ft.
5. A geotechnical investigation is not required for one and two-family dwellings and their accessory structures that fall within the scope of the California Residential Code. Additional information regarding geotechnical investigations is contained within the California Residential Code and the Kern County Code of Building Regulations.

Where there is concern related to the soil conditions in the area, the requirement for a geotechnical investigation shall be required. Additionally, it should be noted that a site-specific study may still be required by the building official even if the above listed exceptions are met. The above listed exceptions shall not permit any work in violation of the CBC or CRC.