



CODE REVIEW COMMITTEE

SACRAMENTO VALLEY ASSOCIATION OF BUILDING OFFICIALS

Committee Chair: Bob Stetson PH: 916-781-6600

Code Review Committee Question/Survey for February 2008 and Committee Supported Responses

Subject: Soil Investigations based on CA CBC 2007

1. Given: Assume a level lot and soil bearing pressure of 1500 psf.
Under the new codes, does your jurisdiction require a soil investigation for;

1a. New one-story, 4,000 sq ft commercial building?	YES	NO
	24 89%	3 11%
1b. A 500 sq ft deck, 3 feet above ground and part of an R-3?	YES	NO
	1 4%	26 96%
1c. An in-ground pool for a single-family dwelling?	YES	NO
	6 22%	21 78%
1d. Manufactured homes on state-approved foundations	YES	NO
	9 33%	18 67%
1e. A 500 sq ft residential addition (using conventional construction) to a single-family dwelling?	YES	NO
	3 11%	24 89%
1f. A 500 sq ft detached accessory structure to a single-family dwelling?	YES	NO
	3 11%	23 89%
1g. A one-story agricultural building intended only for incidental human occupancy?	YES	NO
	5 19%	22 81%
1h. A new custom 4,000 sq ft, one-story, single-family dwelling (engineered design)?	YES	NO
	19 70%	8 30%
1i. A new custom 4,000 sq ft, one-story, single-family dwelling (using conventional construction)?	YES	NO
	14 52%	13 48%
1j. Would you require a new soils report for a master-plan tract home that has a soils report form 1988?	YES	NO
	14 52%	13 48%

Comments by Spokespersons

- Soil Investigation needs to be defined to answer this question since some soil information is required for any of these situations but not necessarily a form Geotechnical Investigation.

- "No" answers assume that there is no fill onsite and that the design criteria is for the worst case scenario.
- Per our policy, no soils report is required if 1000 psf bearing pressure is used.
- The soil throughout our jurisdiction is sandy loam. It has consistently tested at 1500# bearing or higher. If an engineer wants to use values higher than 1500# we require a soils report.
- Alternate methods and material request required for the items above with a "No" answered except conventional construction using class D.
- Questions were answered considering earthquake design requirements.
- For 1a & 1h: if the design is based on Code minimums, including SDC determination via ASCE 7-05, then the answer is "no".
- Question 1c depends on slope and soils conditions.
- Regarding 1d: we do not inspect mobile homes.
- Case by case for 1c, 1h and 1i.
- 1e 1f and 1g: no, provided the design engineer attests that there are no signs of differential movement or possible loss of soil strength.
- 1j: no, provided that engineer is still in business and the report provides the required design criteria.
- For 1j we would allow the soils engineer to provide an addendum to the existing soils report to bring it current with the 2007 CBC.
- Our city 2007 CBC design criteria is to allow 1500 psf soil bearing pressure for residential and commercial projects, unless the site is known to have poor soil. If the site has poor soil, then we would require a soils report (we do not allow applicants to use 1000 psf if poor soil is encountered, we only allow it if they choose to be conservative but have acceptable soil conditions).

Code Review Committee Supported Responses

CBC Section 1802.2 requires the owner or applicant to submit a foundation and soils investigation to the building official where required in Section 1802.2.1 through 1802.2.7. The 2006 IRC does not require foundation and soils investigations unless required by the Building Official; however, the 2006 IBC require foundation and soils investigations unless exempted. The only CA amendment exempts some limited OSHPD 2 buildings. Therefore, foundation and soils investigations are required unless the building official determines that satisfactory data from adjacent areas is available to demonstrate that an investigation is not necessary for any of the following:

- Questionable soil (CBC Section 1802.2.1)
- Expansive soil (CBC Section 1802.2.2)
- Ground-water table (CBC Section 1802.2.3)
- Pile and pier foundations (CBC Section 1802.2.4)
- Rock strata (CBC Section 1802.2.5)
- Seismic Design Category C (CBC Section 1802.2.6)

However, the exception to CBC Section 1802.2 does not include Seismic Design Category D, E or F (CBC Section 1802.2.7). Therefore, if the building official concludes that the strict enforcement of CBC Section 1802.2 to require foundation and soils investigations for some

projects in Seismic Design Category D, E or F due to conditions within the jurisdiction, the building official could pursue local amendment to the code. The building official may also choose to apply Section 104.10 (Modifications) or 104.11 (Alternative materials, design and methods of construction and equipment) of the Appendix Chapter 1 (if adopted by the jurisdiction)

- 1a. One-story commercial buildings less than 4000 sq ft? **COMMITTEE RESPONSE:** No
- 1b. Decks of 500 sq or less, 3 ft above ground and part of an R-3? **COMMITTEE RESPONSE:** No
- 1c. Private in-ground pools? **COMMITTEE RESPONSE:** No
- 1d. Manufactured homes on state-approved foundations? **COMMITTEE RESPONSE:** No
- 1e. Residential additions to single-family dwellings less than 500 sq ft using conventional construction? **COMMITTEE RESPONSE:** No
- 1f. Detached accessory structures less than 500 sq ft? **COMMITTEE RESPONSE:** No
- 1g. One-story agricultural buildings intended only for incidental human occupancy **COMMITTEE RESPONSE:** No
- 1h. Custom new single-family dwellings, one-story, 4000 sq ft, conventional engineering **COMMITTEE RESPONSE:** Yes
- 1i. Custom new single-family dwellings, one-story, 4000 sq ft, not using conventional construction **COMMITTEE RESPONSE:** Yes
- 1j. Would you require a new soils report for a master-plan tract home that has a soils report form 1988?

COMMITTEE RESPONSE:

Yes, the industry standard is that a soils report is good for three years. A new report would also be necessary since the code requirements have changed.

2. Is your jurisdiction exempting any project from soils investigations based upon:

2a. Written policy	YES	NO
	11 41%	16 59%
2b. Ordinance or code revision	YES	NO
	3 11%	24 89%
2c. Alternate methods and materials request	YES	NO
	7 19%	22 81%
2d. Case-by-case at time of plan review	YES	NO
	19 73%	7 27%

Comments by Spokespersons

- Or case by case when the application is submitted.
- 2d: yes if using less than 2000 psf; no if using over 2000 psf.

Code Review Committee Supported Responses

It is up to jurisdictions how they proceed. However, our survey indicates that primarily jurisdictions are using a case-by-case basis at the time of plan review. Written policy may supplement this decision process. Rarely are ordinances invoked to set the parameters for soil investigations.