



Hurunui District Council

Liquefaction Assessment procedure.

(Geotech consulting Sept 2011 report and the ecan report R12/83 - 2013)



Information for LBP's as to what is required in each Liquefaction zone.

Zone 1 (red colour) Low to high potential of liquefaction and "liquefaction assessment required" zone.

1. All new Housing and major/minor habitable extensions to have a Full Liquefaction assessment by a geotechnical professional which must include deep testing where no good quality existing geotechnical data exists (TC3 ground assumed until proven otherwise).
2. IL1 Buildings – Standard Foundations allowable

Zone 2 (orange colour) Low potential of liquefaction.

1. All new housing and major/minor extensions are to be built on TC2 equivalent foundations & have a full liquefaction assessment by a geotechnical engineer which should include deep testing where no good quality existing geotechnical data exists.
2. Garages/Sheds* and other ILI buildings can be installed with TCI foundations (eg using NZ Standard 3604).

Zone 3 (yellow colour) very low potential of liquefaction.

1. No liquefaction testing required - Standard foundations eg constructed to NZS 3604.

Zone 4 (grey colour) Nil to extremely potential of liquefaction.

1. Standard foundations eg constructed to NZS 3604 no liquefaction testing required.

What is a liquefaction assessment?

The process of characterising the ground conditions at a site, and the evaluation of potential risks to the project associated with those conditions. The geotechnical professional will look at the soil or rock properties and the groundwater environment.

The geotechnical engineer will normally carry out a number of steps, including but not limited to: .
site inspection,

- Site inspection
- Desk Study
- Fieldwork (eg. Drilling, Pitting)
- Laboratory Testing
- Analysis, and
- Reporting

The scope of work required very much depends on the nature of the project and the complexity of the ground conditions. Depending on the objectives of the assessment, sometimes an inspection and desk study can suffice, especially where good existing reports or geotechnical records exist. Conversely, the scope may require detailed and extensive fieldwork. Most often, the minimum undertaken would be site inspection and desk study, with comments collated into a brief report. For house development projects there is a minimum scope of geotechnical assessment work required, as set out in NZS 3604:2011 Timber-framed buildings

<https://www.building.govt.nz/building-code-compliance/how-the-building-code-works/using-nzs-3604-timber-framed-buildings>

For guidance on requirements for the Technical Category zones:

<https://www.building.govt.nz/building-code-compliance/canterbury-rebuild/understanding-the-technical-categories>

For guidance on requirements for subdivisions or plan changes, refer to Appendix B2 of DBH (April 2012):

<https://www.building.govt.nz/building-code-compliance/canterbury-rebuild/repairing-and-rebuilding-houses-affected-by-the-canterbury-earthquakes>

Who can carry out a liquefaction assessment?

A geotechnical professional who must be either:

- a CPEng Geotechnical Engineer or
- for the purposes of this report, in relation to geotechnical assessment for residential properties, a PEngGeol. Engineering Geologist with suitable relevant training and experience in foundation investigations and liquefaction assessment.

Maps.

To determine the exact zone of your site, please contact the council.