CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY

Name(s)
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Project Number
J0608

Project Title
Soil Liquefaction: Comparing Various Soils and Amount of Water Necessary to Compromise the Integrity of the Foundation

Abstract

Objectives/Goals
I want to find which soil foundation can withstain the most water before liquifaction occurs.

Methods/Materials
I am going use 4 different types of soils. Sand, Clay, Loam, and Valley Soil. I am going to put these soils into a 7 inch container. I will then add 3and a half inch block builiding onto the top of the soil. I then added 4oz of water into the soil. For every minute of passing time that the building did not show any indication of movement, I added two more ounces of water. For every three minutes, I added 3 oz of weight to the building. I recored any movement of the building. This would indicate when liquifaction occured.

Results
Sand lasted the longest. 14.9 minutes before liquifaction occured.
Loam lasted 9.2 minutes before liquifaction occued
Clay lasted 2.5 minutes
valley Soil lasted 2.2 minutes

Conclusions/Discussion
My experiment allowed me to see which soil stayed stable the longest. Sand did surprinsingly well. It took the longest to liquify. I learned that sand would be stable in keeping buildings stable when the soil is subjected to large amounts of water due to earthquakes in regions such as coastal areas.

Summary Statement
Finding when liquifaction occurs in different types of soil, and which soil will remain stable in this event.

Help Received
Dad helped set up project.