

# Hyunseung Kim

## Project:

Effect of Over-consolidation and Desiccation on the Response of a Gold Mine Tailings under Simple Shear Loading

## Abstract:

Thickened tailings offer several advantages over conventional depositions techniques, and are being increasingly used by practitioners of mine waste geotechnique. An understanding of the liquefaction characteristics of mine tailings and its dependence on relevant filed variables is important for effective design. The effects of desiccation on cyclic resistance and liquefaction potential of the tailings has been assessed in this research, and compared to the effects of mechanical over-consolidation. An experimental study, with the primary aim of understanding the liquefaction behaviour of a gold mine tailings under simple shear loading, was performed by conducting both monotonic and cyclic tests under different initial state (stress level, OCR, stress history, and water content). This research compares the effect of over-consolidation ratio (OCR) and desiccation of thickened gold mine tailings with different over-consolidation ratios under simple shear loading. It has been shown that over consolidation significantly increases the capacity of the tailings, and that the effect of desiccation can be assessed using concepts of over consolidation.

## Degree:

M.Eng. Project

## Graduation:

2011

## Supervisor:

Siva Sivathayalan