

## **Collapse Surface Definition of Clayey Sands**

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**Abstract :** It has been shown that a certain collapse surface may be defined for loose sands in the three dimensional space in which the sample sand experiences collapse and instability leading to an unsteady and strain-softening behaviour. The unsteady state due to collapse surface may lead to such phenomena in the sand as liquefaction and flow behaviour during undrained loading. Investigating the existence of the collapse surface in Firoozkooh 161 sand and its different clay mixtures with various plasticities, the present study aims to carry out an in-depth investigation of the effects of clay percent and its plasticity on the clayey sand behaviours. The results obtained indicate that collapse surface characteristics largely depend on fine percent and its plasticity. Interesting findings are also reported in this paper on the effects of fine sand percent and its plasticity on the behavioural characteristics and liquefaction potential of clayey sands.

**Keywords :** critical state, collapse surface, liquefaction, clayey sand

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