Cyclic Triaxial Testing System to Evaluate Shear Strength and Liquefaction Potential of Noncohesive Soil

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The triaxial cyclic loading frame is designed as a stand unit in which the mechanics, pneumatic as well as the necessary electronic interface to the computer have been installed. Cyclic triaxial test is capable of applying a uniform sine, square and triangular load at a frequency within the range of 0.001 Hz to 100 Hz. The cyclic triaxial test consists of imposing either a cyclic axial deviator stress of fixed magnitude (load control) or cyclic axial deformation (stroke control) on a cylindrical soil specimen enclosed in a triaxial pressure cell.

The result of axial strain and axial stress are measured and used to calculate either stress-dependent or stroke-dependent modulus or damping. The cyclic triaxial modulus or damping test provides parameter that may be considered for use in dynamic, linear and non linear analytical methods. One of the primary purposes of these test method is to obtain data that are used to calculate Young's modulus and Liquefaction Potential.

Technical Specification

Name	Parameter	Range
Sigma 1	Sinusoidal load(Max 10 kN)	0.001-100 Hz
Sigma 3 Back Pressure	Pressure kPa Pressure kPa	0-1000 kPa (Res.1 kPa) 0-1000 kPa (Res.1 kPa)
Volume change	Volume 1	0-100 ml (Res. 0.01ml)
Volume bottom	Volume 2	0-100 ml (Res. 0.01ml)
Volume top	Volume 3	0-100 ml (Res. 0.01ml)
Displacement	Axial Deformation	0-50mm (Res. 0.01mm)

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