Kiso-Jiban's Soil and Rock Mechanics Laboratories

Kiso-Jiban has soil and rock mechanics laboratories in **Japan (Tokyo, Osaka and Hiroshima), Singapore and Malaysia.** Kiso-Jiban laboratories are internationally well known as high technical and quality soil and rock laboratories. Kiso-jiban laboratories are equipped by advanced automatic testing apparatuses to perform various types of soil and rock tests. The laboratories are operated and maintained by well-trained laboratory technicians. Number of our laboratory staff can be minimal because of their efficient working manner and advanced automatic testing apparatuses. The numbers of staff are summarized below;

Kiso-Jiban Laboratory	**Number of Staff**
Tokyo	14
Osaka	5
Hiroshima	2
Singapore	9
Malaysia	4

Type of Tests

The following types of tests are conducted by Kiso-Jiban Laboratories;

(1) Soil Tests

- Index Property Tests
- Unconfined Compression Test
- Static Triaxial Compression Tests (UU, CIU, CID) on saturated and unsaturated soils
- Cyclic Triaxial Tests (deformation, liquefaction)
- Direct Shear Test (Constant Pressure Shear, Constant Volume Shear)
- Simple Shear Test
- Consolidation Test
- Poisson's Ratio Measurement
- Permeability Test
- Dispersion Test
- Maximum and minimum dry densities
- CBR
- Compaction Test

Automatic Triaxial Test Apparatus

Cyclic Triaxial Test

Direct Shear Test

Consolidation (Oedometer) Test

In addition to the above conventional soil tests, the following special tests can be carried out upon client's request. Custom made testing such as large scale testing using a test chamber is also available.

Kiso-Jiban Consultants Co'Ltd
Soil/Rock Mechanics Laboratory

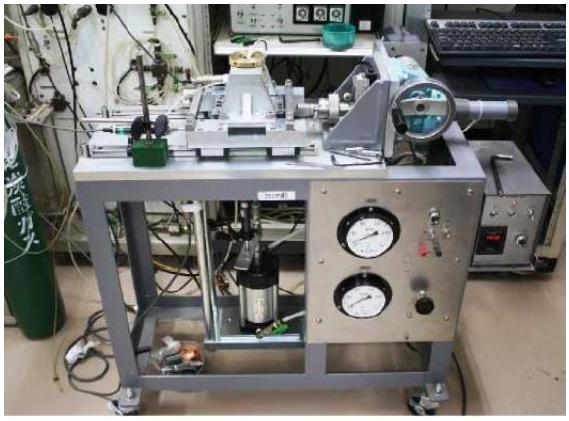
Automatic Triaxial K_0 Apparatus

Triaxial Compression Test on Unsaturated soil

Cyclic Torsional Shear Test

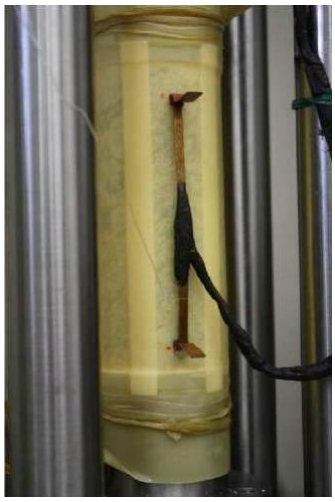
Large Size Triaxial Test

Constant Rate of Strain Consolidation Test



High Pressure Direct Shear Test

Pulse Velocity Measurement in Triaxial Cell



Local Deformation Transducer (LDT) on Specimen

(2) Rock Test

- Water Content and Unit Weight Measurement
- Uniaxial Compression Test
- Point Load Test
- Triaxial Compression Test
- Ultrasonic Wave Velocity Measurement

Triaxial Compression Test on Rock

Ultrasonic Wave Velocity Measurement

Standards

The laboratory testing is conducted in accordance with the following standards and codes.

- British Standard, B.S. 1377; 1990
- ASTM Standard
- Japanese Industrial Standard
- JGS (Japanese Geotechnical Society) Standard
- ISRM (International Society for Rock Mechanics) commission on testing method

Quality Control

All the Kiso-Jiban Laboratories have ISO9001:2000 certificate. Kiso-Jiban Singapore Laboratory is accredited also by SAC-SINGLAS (SAC (Singapore Accreditation Council) is the national authority for the independent accreditation of conformity assessment bodies in Singapore.). Quality manual covers primarily Test Procedure, Data Control, Calibration of Testing Apparatus, Control of Non-conforming data, Quality Audit, Staff Training, Equipment Maintenance, etc. In addition, to keep the technical competence of the laboratories at the highest level, the engineering managers with a degree of civil engineering (geotechnical) have been appointed as engineers in charge of laboratories and they oversee and advise on the execution, maintenance, quality control and development of testing.

As a part of quality control, Kiso-Jiban Laboratories participate in inter-laboratory comparison and proficiency testing program prescribed by Government Agencies.