

Direct Simple Shear ShearTrac II-DSS

Benefits and Features

- Choose load capacity to fit user needs up to 4.4 kN (1,000 lbs.)
- Total automation, control, data collection and reporting of test results
- Prepare tables and plots of report quality within minutes of completing a test
- Geo-NET compatibility lets unit be accessed and controlled over a computer network
- Generate columns of data for easy reduction using your own spreadsheet software
- Accurate displacement rate control from 0.00003 to 15 mm per minute (0.000001 to 0.6 inches per minute)
- Stand alone through front keypad and LCD menu capability

Applicable Test Standards

- ASTM D6528 Consolidated Undrained Direct Simple Shear Testing of Cohesive Soils
- ASTM D2435 / T216 One-Dimensional Consolidation Properties of Soils

The ShearTrac II-DSS system is a universal shear system capable of performing the consolidation and shear phases of a direct simple shear test under full automatic control. The direct simple shear device is a way to measure undrained shear strength of soils that reflects the average shear strength mobilized in the field during failure of embankments on soft soil foundations and deep excavations in clay. The DSS test generates a fairly homogeneous state of shear stress throughout the specimen, which provides initial stress condition, stress path, and deformation configuration that models numerous field loading conditions more closely than any other test systems such as triaxial. The system consists of a computer-controlled unit that utilizes micro-stepper motors to apply the vertical and horizontal loads to the soil specimen.

The system is capable of running a consolidation phase for up to 32 increments automatically. Horizontal shearing can be applied at a specified rate of deformation or at a specified rate of horizontal force change. The constant volume condition during the shear is maintained through a closed loop computer control with the vertical displacement sensor as the feedback. The system is capable of displaying the current status of a test and graphically portraying the progress of the test in real time. The system includes the capability for the operator to alter the test process and conditions at any stage of the test.



Standard ShearTrac II System

Direct Simple Shear ShearTrac II-DSS

TECHNICAL SPECIFICATIONS

CAPACITY

Up to 4.4 kN (1,000 lbs.)
vertical and horizontal

VERTICAL MOTOR

Stepper motor with built-in controls for
vertical load

HORIZONTAL MOTOR

Stepper motor with built-in for a
horizontal load

SPEED RANGE

0.00003 to 15 mm per minute
(0.000001 to 0.6 in. per minute)

VERTICAL TRAVEL

12.5 mm (0.5 in.) resolved to
0.0013 mm (0.00005 in.)

HORIZONTAL TRAVEL

±12.5 mm (±0.50 in.) resolved to
0.0013 mm (0.00005 in.)

POWER

110/220 V, 50/60 Hz, 1 phase

DIMENSIONS

228 x 560 x 762 mm (9 x 22 x 30 inches)

WEIGHT

63 kg (140 lbs.)

MODELS & FRAME CAPACITY

ST-DSS-500: 2.2 kN (500 lbs.)

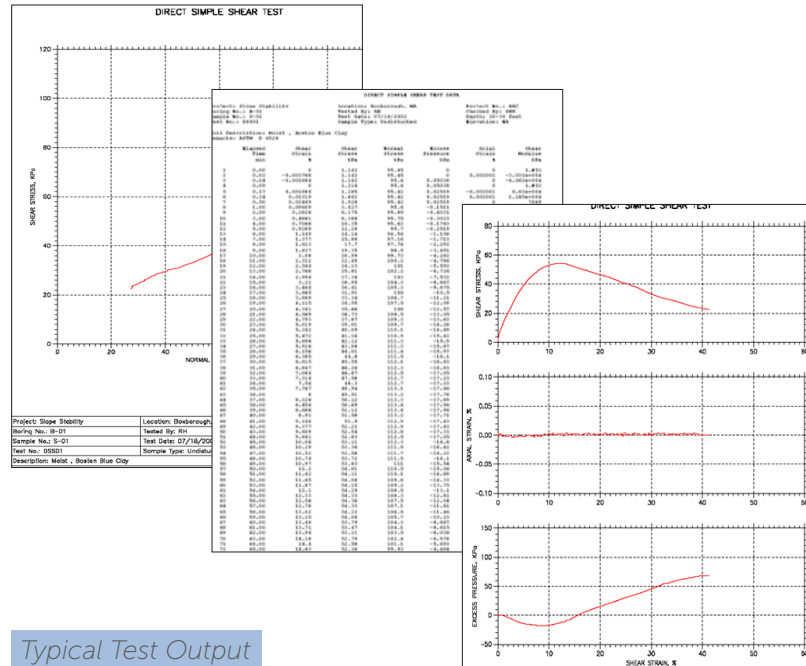
ST-DSS-1000: 4.5 kN (1,000 lbs.)

ACCESSORIES

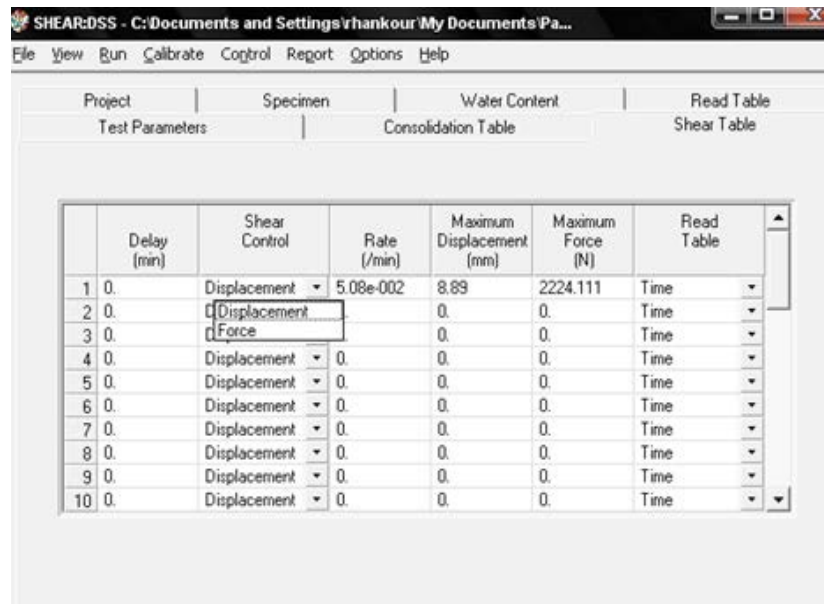
ShearTrac II-DSS accessories includes
shear box to test round samples up to
100 mm (4 in.) a, top and bottom porous
stones with Teflon® coated stacked rings.

Geo-NET-PC Network card and cable to
link ShearTrac II to PC.

DSS Software package to automatically
run and report direct simple shear tests.



Typical Test Output



User-friendly Interface