

Benefits and Features

- Built-in end clamps for geosynthetics testing
- Optional grip plates for true internal friction determination for GCLs
- Linear bearings for minimum horizontal friction
- Two sets of limit switches to prevent over traveling
- Built-in 4-channel data acquisition with 16-bit resolution
- Two LCD display
- Two displacement transducers with 100 mm (4.00 in.) range and 0.002 mm (0.00008 in.) resolution
- Two universal shear web type load cells
- Accurate displacement rate control from 0.00003 to 10 mm per minute (0.000001 to 0.4 in. per minute)
- Built-in electronic controls for automatic display of data and control of test
- Windows® friendly user interface
- Fully incremental consolidation test capability

Applicable Test Standards

- [ASTM D5321 / D6243](#)
- [ASTM D3080 / T236](#)
- [BS 1377](#)

The ShearTrac III system is capable of performing the consolidation and shearing phases of a 305 x 305 x 200 mm (12 x 12 x 8 in.) height direct shear test under automatic control for soils and geosynthetics (geomembrane, geotextile, GCL, geogrid, etc.), as well as for determining the interface frictional properties of soil and geosynthetics, and internal friction of GCLs.

The system consists of a computer controlled unit that utilizes a micro stepper motor to apply the horizontal loads. Versions of the unit are available to test loads up to 44.5 kN (10,000 lbs). Built-in electronics control test and display data in real time. The system is capable of applying a constant rate of strain or stress at any displacement rate up to 15 mm (0.6 in.) per minute. The computer controlled program runs under latest Windows® software. It includes the capability to display the current status of latest and graphically portray the progress of the test in real time. The system also includes the capability for the operator to alter the test process and conditions at any stage during the test.

This is a turnkey system that includes hardware and software for recording all test input data and settings of selected test parameters, performing standard engineering calculations on the data, and producing graphically plotted and printed output in the standard Corps format, in accordance with ASTM D5321, D6243, and BS 1377 standards.



Standard Fully-Automated ShearTrac III System

Interface Shear ShearTrac III

TECHNICAL SPECIFICATIONS

CAPACITY

44.5 kN (10,000 lbs.)

VERTICAL MOTOR

Stepper motor with built-in controls for vertical load

HORIZONTAL MOTOR

Stepper motor with built-in controls for horizontal load

SPEED RANGE

0.00003 to 7 mm per min.
(0.000001 to 0.3 in. per min.)

VERTICAL TRAVEL

90 mm (3.5 in.) resolved to 0.002 mm
(0.00008 in.)

HORIZONTAL TRAVEL

90 mm (3.5 in.) resolved to 0.002 mm
(0.00008 in.)

MODEL

ST-10000: 44.5 kN (10,000 lbs.) frame capacity in both directions

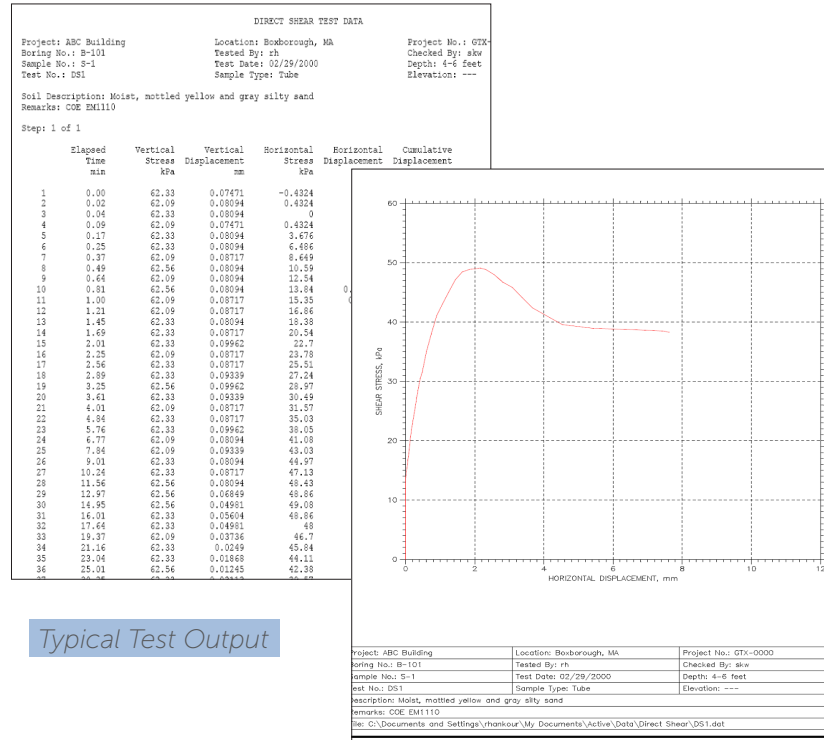
ACCESSORIES

Geo-NET PC Network card and cable to link ShearTrac III to PC

SHEAR: Software package to automatically run consolidation and direct shear test on ShearTrac III

SHEAR.REPORT: Editing / reporting software package

GRIPPING PLATES: Optional for GCL testing



Typical Test Output

SHEAR

File View Run Calibrate Control Report Options Help

Project	Specimen	Water Content	Read Table		
Test Parameters	Consolidation Table	Shear Table	Shear Table		
Delay (min)	Shear Control	Rate (/min)	Maximum Displacement (mm)	Maximum Force (N)	Read Table
1 0.	Displacement	1.	50.	4000.	Time
2 0.	Displacement	0.	0.	0.	Time
3 0.	Displacement	0.	0.	0.	Time
4 0.	Displacement	0.	0.	0.	Time
5 0.	Displacement	0.	0.	0.	Time
6 0.	Displacement	0.	0.	0.	Time
7 0.	Displacement	0.	0.	0.	Time
8 0.	Displacement	0.	0.	0.	Time
9 0.	Displacement	0.	0.	0.	Time
10 0.	Displacement	0.	0.	0.	Time

User-friendly Interface