

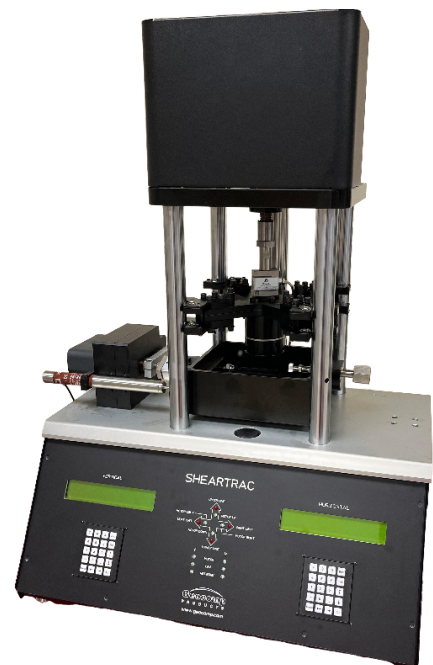
# DIRECT SIMPLE SHEAR

## SHEARTRAC II

The ShearTrac II direct simple shear (DSS) system is used to measure undrained shear strength of soils to reflect 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 system.

The system design allows for easy interchanging between direct simple shear and direct/residual shear testing if desired. The vertical assembly can also be used to perform consolidation (incremental or CRC/CRS) or unconfined compressive strength tests.

- Large diameter loading piston with low friction support mechanism to eliminate rocking
- Consolidate with or without shear bias (or shear stress)
- Built in safety features
- Smart and sophisticated technologies to simplify testing
- Repeatable, reliable, and accurate results you can trust
- Real-time and remote test parameter changes for quality control
- Convenient reporting and data export
- Faster, smarter, better: designed with full automation and manual control options
- Easy upgrade to perform additional test types
- Designed and manufactured in the USA



Standard Direct Simple Shear System

### Applicable Test Standards

ASTM D2166, D2435, D3080, D4186, D4546, D6528 | AASHTO T208, T216, T236

BS 1377-5, 1377-7 | ISO/TS 17892-5 17892-10 | AS 1289.6.6.1, 1289.6.2.2

# DIRECT SIMPLE SHEAR SHEARTRAC II



## TECHNICAL SPECIFICATIONS

### LOAD CAPACITY

Up to 11 kN (2.5 klbf) vertical and horizontal

### VERTICAL/HORIZONTAL MOTORS

Micro-stepper system with built-in controls

### CONTROL

- Stress (load)
- Strain (displacement)

### TEST TYPE

- Drained (constant load)
- Undrained (constant volume with passive or active control)

### RATE OF DISPLACEMENT

0.000006 to 33 mm/min  
(0.000002 to 1.3 in/min)

### VERTICAL TRAVEL

44.5 mm (1.75 in)

### HORIZONTAL TRAVEL

+/- 25.4 mm (1.00 in)

### POWER

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

### DIMENSIONS

660 x 406 x 813 mm (26 x 16 x 32 in)

### WEIGHT

66 kg (145 lbs)

### INCLUDED

- GeoNet-U USB 2.0 network adapter and cable to link to PC/laptop
- DSS software module to automatically run and report tests

### ACCESSORIES

Top/bottom cap, bronze sintered porous stones with pins, Teflon coated rings, base plate - 50 mm (2.0 in), 63.5 mm (2.5 in), and 100 mm (4.0 in)

### WARRANTY

12 month warranty; extended warranties available

## User-Friendly Interface

DSS

File View Run Calibrate Control Report Options Help

Project Specimen Water Content Read Table Test Parameters Consolidation Table Shear Table

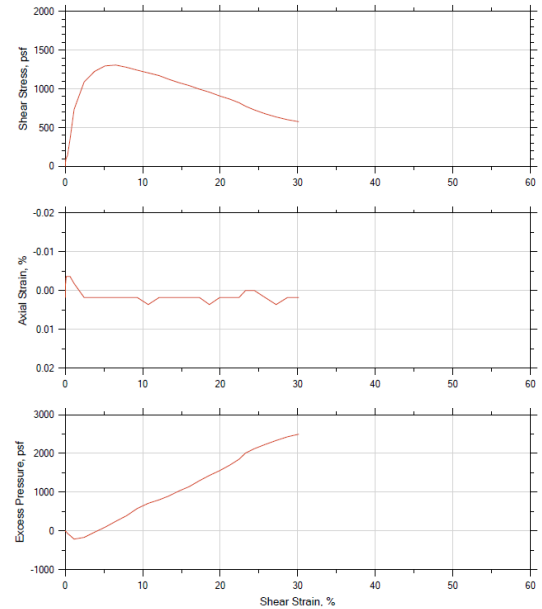
Delay (hr)	Shear Control	Rate (hr)	Maximum Displacement (in)	Maximum Force (lb)	Read Table
1.0	Displacement	0.05	0.5	500	Time
2.0	Displacement	0.0	0	0	Time
3.0	Displacement	0.0	0	0	Time
4.0	Displacement	0.0	0	0	Time
5.0	Displacement	0.0	0	0	Time
6.0	Displacement	0.0	0	0	Time
7.0	Displacement	0.0	0	0	Time
8.0	Displacement	0.0	0	0	Time
9.0	Displacement	0.0	0	0	Time
10.0	Displacement	0.0	0	0	Time

Normal Control: Constant Volume Resample Time: 0 hr

Constant Volume Gain: 1 Filter: None

## Typical Test Output (example)

DIRECT SIMPLE SHEAR TEST by ASTM D6528



Project: DSS123	Location: Anywhere, USA	Project No.: DSS
Boring No.: B-5	Tested By: sf	Checked By: bg
Sample No.: UR-1	Test Date: 2/21/18	Depth: 38-40 ft
Test No.:	Sample Type: tube	Elevation: ---
Description: Moist, very dark gray clay		
Remarks:		

## Typical Test Output (example)

DIRECT SIMPLE SHEAR TEST by ASTM D6528

Elapsed Time (hr)	Shear Strain (%)	Shear Stress (psf)	Normal Stress (psf)	Excess Pressure (psf)	Axial Strain (%)	Shear Modulus (psf)
0.000	0	0.000	9488.181	0.000	0	0
0.000	0	1.106	9488.181	0.000	0	0
0.001	0.001804	3.317	9488.900	-0.719	0	1.838e+05
0.001	0.003609	6.635	9489.619	-1.438	0	1.838e+05
0.002	0.007218	9.952	9501.057	-2.876	0	2.758e+05
0.003	0.007218	16.587	3502.484	-4.313	0.001806	2.288e+05
0.004	0.012633	23.222	3504.651	-6.470	0	1.838e+05
0.008	0.025266	39.858	3503.213	-5.032	-0.001806	1.576e+05
0.017	0.061355	71.876	3504.651	-6.470	-0.001806	1.172e+05
0.033	0.1407	106.156	3517.591	-19.410	-0.003612	7.542e+04
0.067	0.3158	145.964	3562.882	-64.701	-0.003612	4.622e+04
0.133	0.6316	203.953	3614.643	-116.462	-0.003612	5.635e+04
0.250	1.155	276.456	3708.101	-209.920	-0.001806	6.377e+04
0.500	2.452	1089.203	9664.248	-166.067	0.001806	4.442e+04
0.750	3.788	1225.215	3528.813	-31.632	0.001806	2.235e+04
1.000	5.137	1295.986	9401.129	97.052	0.001806	2.523e+04
1.250	6.521	1307.044	2320.160	248.021	0.001806	2.004e+04
1.500	7.913	1278.293	3104.941	393.240	0.001806	1.616e+04
1.750	9.3	1240.696	2918.745	578.636	0.001806	1.334e+04
2.000	10.71	1206.417	2785.748	712.433	0.003612	1.126e+04
2.250	12.11	1171.031	2695.167	803.014	0.001806	9667
2.500	13.36	1123.483	2596.677	901.504	0.001806	8407
2.750	14.67	1080.357	2467.993	1030.188	0.001806	7367
3.000	15.99	1042.760	2355.126	1143.055	0.001806	6519
3.250	17.31	996.317	2201.290	1296.901	0.001806	5754
3.500	18.6	957.614	2097.564	1430.617	0.001806	5148
3.750	19.93	908.959	1942.475	1555.706	0.001806	4560
4.000	21.24	868.045	1799.414	1688.767	0.001806	4088
4.250	22.42	821.602	1648.882	1848.299	0.001806	3665
4.500	23.27	776.265	1488.848	2009.333	0	3336
4.750	24.4	728.716	1377.418	2120.763	0	2987
5.000	25.78	678.955	1268.863	2229.318	0.001806	2634
5.250	27.1	638.041	1164.623	2333.558	0.003612	2345
5.500	28.67	602.655	1070.446	2427.735	0.001806	2102
5.750	30.12	577.222	1003.588	2494.593	0.001806	1916