# Geocomp
A SERCEL COMPANY

DIRECT / RESIDUAL SHEAR

SHEARTRAC II

The ShearTrac II system performs the consolidation and shearing phases of a standard direct or residual shear test under fully automated control with convenient monitoring and instant test results. It consists of a computer-controlled unit using independent, electro-mechanical micro-stepper systems to apply the vertical and horizontal loads to soil specimens. No dead weights, hydraulics, or air pressure are required to operate the system, which means greater precision and significantly lower maintenance.

The rigid vertical frame is also ideal to perform consolidation (incremental or CRC/CRS) or unconfined compressive strength tests. Combined with the ability to easily upgrade the system to perform direct simple shear testing makes the ShearTrac II the most versatile shear frame available.

- 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
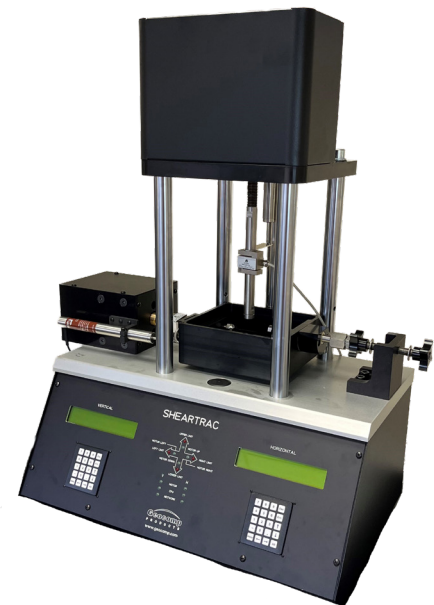
Standard Direct/Residual Shear System

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 / RESIDUAL 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)

RATE OF DISPLACEMENT
0.000006 to 33 mm/min
(0.0000002 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
63 kg (140 lbs)

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

ACCESSORIES
- Shear box sets to test square or round samples up to 101 mm (4 in)
- Includes pad and porous stones

WARRANTY
12 month warranty; extended warranties available

User-Friendly Interface

Typical Test Output (example)

RESIDUAL SHEAR TEST
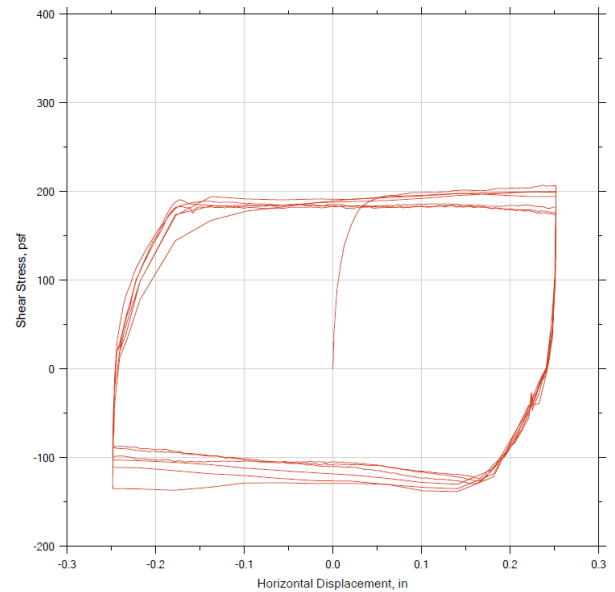
Typical Test Output (example)

DIRECT SHEAR TEST by ASTM D3080

c' = 0.536 psi
φ' = 42.9
tan φ = 0.93
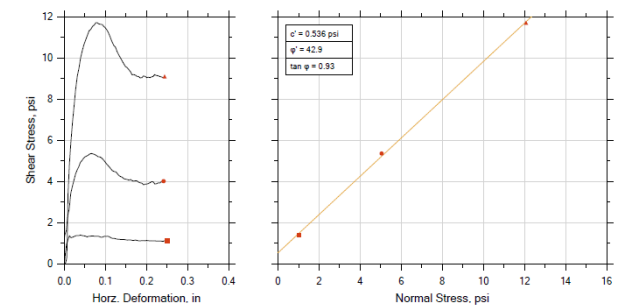
Symbol	■	●	▲
Test No.	DS-1	DS-2	DS-3
Sample No.	XYZ1	XYZ2	XYZ3
Shape	Circular	Circular	Circular
Dimension, in	2.5	2.5	2.5
Area, in²	4.9087	4.9087	4.9087
Height, in	1	1	1
Water Content, %	16.68	16.09	15.05
Dry Density, pcf	98.43	98.93	99.82
Saturation, %	64.92	63.41	60.68
Void Ratio	0.68073	0.67221	0.65734
Consol. Height, in	0.988	0.97	0.97922
Consol. Void Ratio	0.66057	0.62205	0.6229
Water Content, %	20.21	19.07	17.17
Dry Density, pcf	98.63	100.5	101.1
Saturation, %	79.07	78.24	71.43
Void Ratio	0.67729	0.64604	0.6369
Normal Stress, psi	1.0214	5.0412	12.07
Max. Shear Stress, psi	1.4004	5.3646	11.722
Ult. Shear Stress, psi	1.1247	4.0193	9.1137
Time to Failure, min	10.964	18.963	22.002
Disp. Rate, in/min	0.004	0.004	0.004

Project: ABC Landfill	Location: USA	Project No.: ABC-11
Boring No.: 2A	Tested By: fd	Checked By: aw
Sample No.: XYZ1	Test Date: 02/20/2018	Depth: 10 ft.
Test No.: DS-1	Sample Type: remolded	Elevation: N/A

Description: Moist, brown sand

Remarks: Target Compaction: 90% of max dry density (110.0 pcf) at optimum moisture (13%) + 3%. 24 hr saturation.