

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.

- **Load capacity up to 11 kN (2.5 klbf)**
- **Unmatched automation from test start to finish** - 2 to 32 times faster results and labor time savings of 30% to 95% vs. manual testing
- **Flexible design** - perform additional testing on the same platform and save money and space in your lab
- **Full test control and remote monitoring allows you to take your testing on the go** - view real-time results, check test quality, and change parameters
- **Convenient reporting** - produce complete, compliant reports instantly or export data for desired manipulation
- **Designed for consistent and repeatable testing you can be confident in**



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
(0.000002 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

63 kg (140 lbs)

INCLUDED

- Geo-NET network card and cable to link to PC
- DS software module to automatically run and report tests

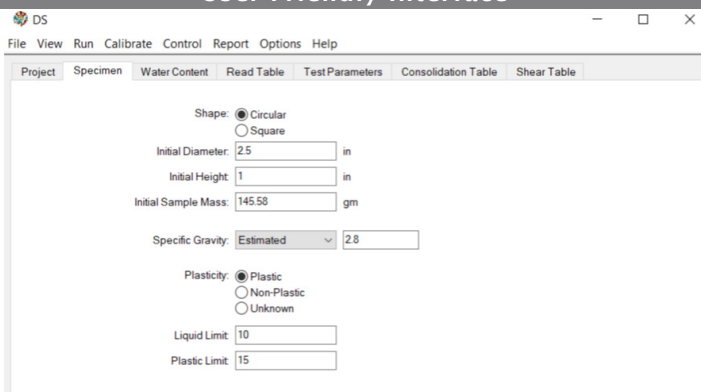
ACCESSORIES

- 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



DS

File View Run Calibrate Control Report Options Help

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

Shape: Circular
 Square

Initial Diameter: in

Initial Height: in

Initial Sample Mass: gm

Specific Gravity: Estimated

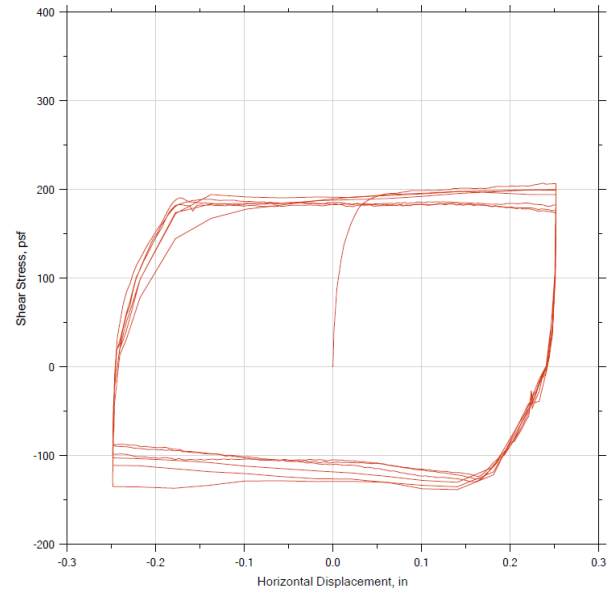
Plasticity: Plastic
 Non-Plastic
 Unknown

Liquid Limit:

Plastic Limit:

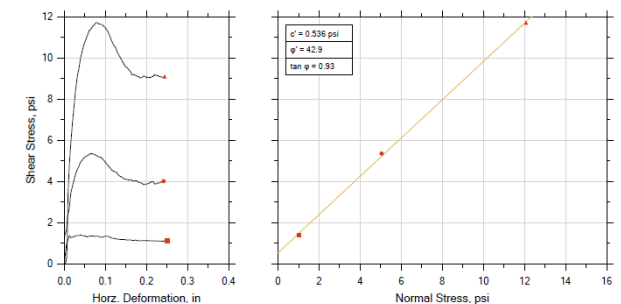
Typical Test Output (example)

RESIDUAL SHEAR TEST



Typical Test Output (example)

DIRECT SHEAR TEST by ASTM D3080



| 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, in ² | 4.9087 | 4.9087 | 4.9087 |
| Height, in | 1 | 1 | 1 |
| Initial | | | |
| 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 |
| Final | | | |
| 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 | 0.64904 | 0.6368 |
| 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 | 18.863 | 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: JG | 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%) + 2%, 24 hr saturation. | | |