Geocomp

Test Smart. Test with Confidence. Test for Success.

INTERFACE SHEAR
SHEARTRAC III

The ShearTrac III system is capable of performing the consolidation and shearing phases of a 305 x 305 x 205 mm direct shear test under automatic controls for soils and geosynthetics (geomembrane, geotextile, GCL, geogrid, etc.) as well as determining the interface frictional properties of soil and geosynthetics and internal frictions of GCLs.

- **Load capacity up to 160 kN (35,000 lbs) vertical and up to 115 kN (25,000 lbs) horizontal**
- **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 Interface Shear System

Applicable Test Standards

- ASTM D5321, D6243, D3080
- AASHTO T236
- BS 1377-7
- ISO/TS 17892-10
- AS 1289.6.2.2

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TECHNICAL SPECIFICATIONS

LOAD CAPACITY

Up to 160 kN (35,000 lbs) vertical
Up to 115 kN (25,000 lbs) horizontal

VERTICAL/HORIZONTAL MOTORS

Micro-stepper system with built-in controls

CONTROL

- Stress (load)
- Strain (displacement)

SPEED RANGE

0.00003 to 7.5 mm per min
(0.000001 to 0.3 in per min)

VERTICAL/HORIZONTAL TRAVEL

+/- 100 mm (4 in)

DIMENSIONS

305 x 305 x 205 mm (12 x 12 x 8 in)

INCLUDED

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

ACCESSORIES

- Shear report: editing/reporting software package
- Gripping plates: optional for GCL testing

WARRANTY

- 12 month warranty; extended warranties available

Date Export and Custom Reporting (example)

GeoTesting EXPRESS

Client:	ABC Company
Project Name:	XXX
Project Location:	---
GTX #:	XXX
Start Date:	04/04/19 Tested By:
End Date:	04/09/19 Checked By:
GCL ID:	Roll #1466 (Group 1) Lot# LL-09-2019
GCL Description:	Black, nonwoven / white, nonwoven GCL
Geomembrane ID:	Roll #G18F001136
Geomembrane Description:	Black, 60 mil microspike HDPE

Interface Shear Test Series by ASTM D6243

Test Series #:	8
Test Profile - Top to Bottom:	steel plate / GEOMEMBRANE / GCL / spiked gripping surface
GCL / Geosynthetic Preparation:	Test set-up saturated at normal load for 16 hours prior to shear. The shiny side of t geomembrane was placed against the black side of the GCL
Test Equipment:	Top box = 12 in x 12 in; Bottom box = 12 in x 12 in; Load cells and LVDTs connectec to data acquisition system for shear force, normal load and horizontal displacement readings; Flat plate clamping device; surface area = 144 in^2
Horizontal Displacement, in/min:	0.04 (specified by client) Test Condition: inundated

Parameter	Point 1	Point 2	Point 3	Point 4	Point 5	Point 6
GCL Initial Moisture Content, %	27.4	32.8	27.1	---	---	---
GCL Final Moisture Content, %	99.0	80.6	61.0	---	---	---
Normal Compressive Stress, psf	10000	20000	30000	---	---	---
Peak Shear Stress, psf	4284	7890	10700	---	---	---
Post Peak Shear Stress, psf	2931	4380	6530	---	---	---
Peak Secant Friction Angle, °	23.2	21.5	19.6	---	---	---
Post-Peak Secant Friction Angle, °	16.3	12.4	12.3	---	---	---
Pre-Test: Average Asperity, mils	28.9	34.4	33.7	---	---	---
In-Line Peel Strength, lbs/in	11.8	12.4	13.8	---	---	---

NOTES:

Peak Friction Angle:	**17.8**	**degrees**
Peak Adhesion:	**1209**	**psf**
Post Peak Friction Angle:	**10.2**	**degrees**
Post Peak Adhesion:	**1015**	**psf**

Figure a. Shear Force vs. Horizontal Displacement

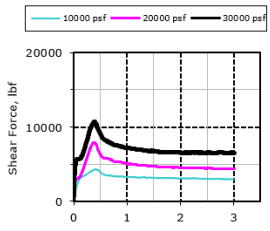
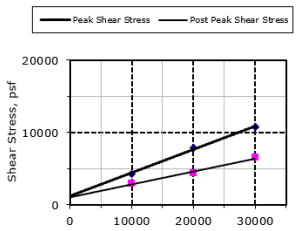
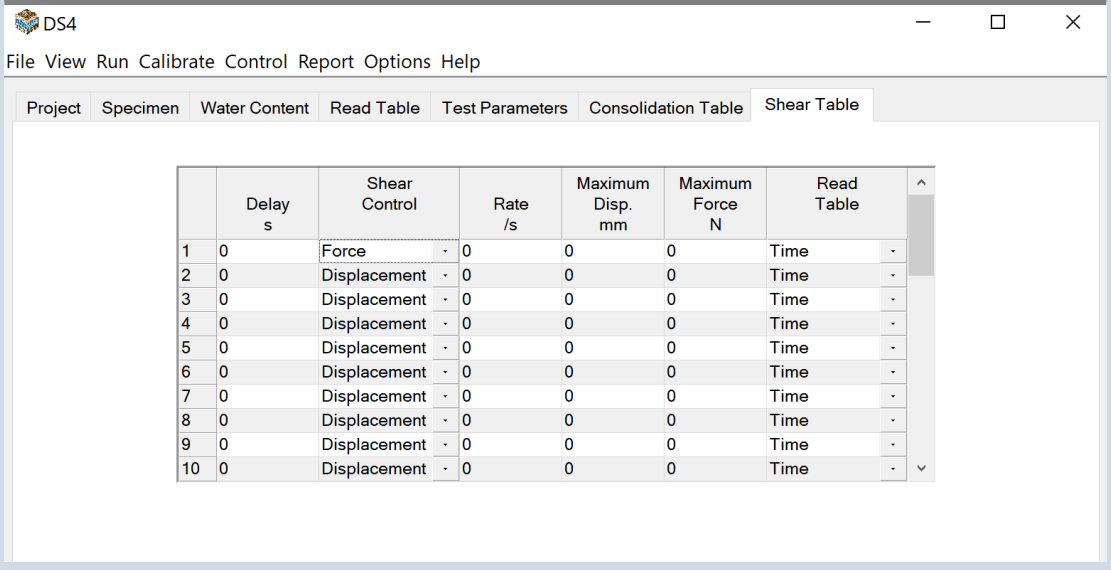


Figure b. Shear Stress vs. Normal Stress



User Friendly Interface



	Delay s	Shear Control	Rate /s	Maximum Disp. mm	Maximum Force N	Read Table
1	0	Force	0	0	0	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