

LAB VANE SHEAR

The Lab Vane Shear System is used to quickly calculate peak and/or residual undrained shear strength on intact or remolded specimens in the lab. Once the set-up is in place and the test conditions are selected, the Vane Shear system will run the entire test from start to finish. The Vane Shear utilizes a high speed, precision micro-stepper motor to apply the torque. An embedded control board with a dedicated CPU takes readings from the torque sensor and controls the stepper motor.

- Determine both peak and residual shear strength
- Highly portable and lightweight
- 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

Applicable Test Standards

- ASTM D4648



Standard Lab Vane Shear System

LAB VANE SHEAR SYSTEM

TECHNICAL SPECIFICATIONS

TORQUE CAPACITY

9 lbf-in (1 Nm)

ROTATIONAL MOTOR

Micro-stepper system with built-in controls

ROTATIONAL SPEED RANGE

0 to 8 rad/sec (customizable for higher speeds)

CONTROL

Torque or Rotation

TORQUE MEASUREMENT

Embedded torque sensor

MEASUREMENT RANGE

-1 Nm (-9 lbf-in) to 1 Nm (9 lbf-in)

MEASUREMENT ACCURACY

61 Nm (0.0005 lbf-in)

VERTICAL TRAVEL

6 in (152 mm)

POWER

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

DIMENSIONS

394 x 400 x 394 mm (15.5 x 15.75 x 15.5 in)

WEIGHT

10 kg (22 lbs)

INCLUDED

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

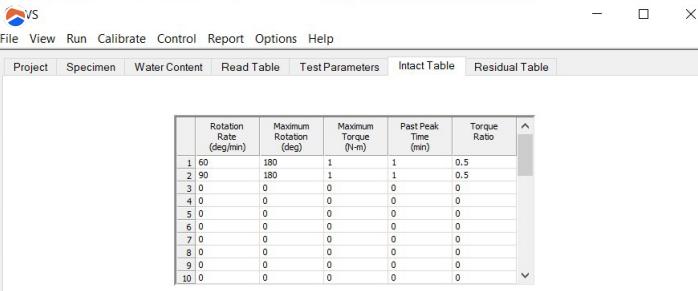
ACCESSORIES

- Four vane blades: 2 short and 2 long (custom lengths available)
 - H:D of 1:1: 12.7 x 12.7 mm (0.5 x 0.5 in)
 - H:D of 2:1: 12.7 x 25.4 mm (0.5 x 1.0 in)

WARRANTY

12 month warranty; extended warranties available

User Friendly Interface

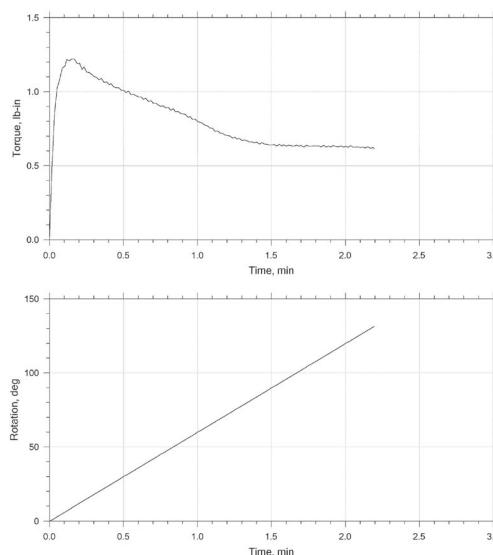


The screenshot shows the software interface with a menu bar (File, View, Run, Calibrate, Control, Report, Options, Help) and a toolbar (Project, Specimen, Water Content, Read Table, Test Parameters, Intact Table, Residual Table). Below the toolbar is a table with columns: Rotation Rate (deg/min), Maximum Rotation (deg), Maximum Torque (N-m), Past Peak Time (min), and Torque Ratio. The table contains 10 rows of data.

	Rotation Rate (deg/min)	Maximum Rotation (deg)	Maximum Torque (N-m)	Past Peak Time (min)	Torque Ratio
1	60	180	1	1	0.5
2	90	180	1	1	0.5
3	0	0	0	0	0
4	0	0	0	0	0
5	0	0	0	0	0
6	0	0	0	0	0
7	0	0	0	0	0
8	0	0	0	0	0
9	0	0	0	0	0
10	0	0	0	0	0

Typical Test Output (example)

Laboratory Vane Shear Test by ASTM D4648/M
Intact Phase
Step 1 of 1



 A Serco Business	Project:	Location: Houston, TX	Project No.: 424142
	Boring No.:	Tested by: AA	Checked By:
	Sample No.:	Test Date: 08/11/22	Dept:
		Elevation:	
	Description:		
	Remarks:		

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Typical Test Output (example)

Laboratory Vane Shear Test by ASTM D4648/M
Intact Phase
Step 1 of 1

Elapsed Time min	Rotation deg	Torque lb-in	Lab Shear Strength psi	Field Shear Strength psi
0	0.000	0.000013	0.000158	0.00108
0.01629	0.799	0.496	1.49	1.89
0.03463	1.89	0.857	3.27	3.27
0.05181	2.85	1.02	3.90	3.90
0.06959	3.88	1.08	4.14	4.14
0.08803	4.89	1.16	4.23	4.23
0.10413	5.99	1.17	4.48	4.48
0.11698	6.78	1.22	4.65	4.65
0.13443	7.82	1.21	4.62	4.62
0.15172	8.86	1.23	4.68	4.68
0.16952	9.90	1.22	4.68	4.68
0.18629	10.9	1.19	4.55	4.55
0.20398	12.0	1.19	4.58	4.58
0.22379	13.0	1.15	4.40	4.40
0.24382	13.8	1.17	4.46	4.46
0.25143	14.8	1.13	4.33	4.33
0.26980	15.9	1.13	4.32	4.32
0.28662	16.9	1.12	4.26	4.26
0.3037	18.0	1.10	4.20	4.20
0.31678	18.8	1.10	4.20	4.20
0.33430	19.8	1.18	4.13	4.13
0.35147	20.6	1.09	4.16	4.16
0.36878	21.9	1.06	4.08	4.08
0.38633	22.9	1.07	4.07	4.07
0.40398	23.9	1.05	4.09	4.09
0.42163	24.7	1.05	4.03	4.03
0.43941	25.8	1.03	3.95	3.95
0.45713	26.8	1.03	3.92	3.92
0.47490	27.9	1.03	3.92	3.92
0.49262	28.9	1.01	3.86	3.86
0.50938	30.2	1.01	3.85	3.85
0.52707	30.7	0.993	3.79	3.79
0.53567	31.6	1.00	3.84	3.84
0.55337	32.8	0.979	3.74	3.74
0.56885	33.8	0.982	3.75	3.75
0.58617	34.9	0.973	3.71	3.71
0.60328	35.9	0.963	3.69	3.69
0.62028	37.0	0.965	3.69	3.69
0.63837	37.7	0.948	3.62	3.62
0.65607	38.8	0.966	3.65	3.65
0.67352	39.8	0.953	3.57	3.57
0.68983	40.9	0.940	3.59	3.59
0.70733	41.9	0.921	3.52	3.52
0.72493	42.9	0.927	3.52	3.52
0.74233	43.7	0.911	3.48	3.48
0.75908	45.0	0.902	3.44	3.44
0.7679	46.5	0.904	3.45	3.45
0.78584	48.6	0.891	3.40	3.40
0.80277	47.9	0.895	3.42	3.42
0.82003	48.9	0.875	3.34	3.34

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