



GeoTesting Express, Inc. (GTX), is a world-wide leader in performing triaxial testing. The combination of our highly experienced and educated staff and our fully automated laboratory testing equipment makes us the industry experts at this important and complex test.

Capabilities of GeoTesting Express' Triaxial Testing

GeoTesting Express is a world-wide leader in performing triaxial testing. The combination of our highly experienced and educated staff and our fully automated laboratory testing equipment makes us the industry experts at this important and complex test. We utilize state-of-the-art automated test equipment enabling us to perform triaxial testing twentyfour hours a day, seven days a week. Our laboratories are accredited by the American Association of State Highway and Transportation Officials (AASHTO) and the American Association for Laboratory Accreditation (A2LA)*. We are validated by the United States Army Corps of Engineers (USACE) for performing these tests. Our Chief Engineer, Dr. W. Allen Marr, co-authored a paper with T. William Lambe titled *"Stress Path Method: Second Edition"* appearing in the Journal of the Geotechnical Engineering Division, June 1979.

Typical Triaxial Tests Performed	Test Method
Unconsolidated Undrained (UU)	ASTM D2850+/ AASHTO T 296
Consolidated Drained (CD)	ASTM D7181+/ USACE EM1110-2-1906
Consolidated Undrained (CU) with Pore Pressure Measurements	ASTM D4767•/ AASHTO T 297
Cyclic—Modulus & Damping	ASTM D3999
Cyclic—Load Controlled	ASTM D5311•
Stress Path	GTX-S1010
Permeability	ASTM D5084 + / USACE EM1110-2-1906

Tests for which GeoTesting Express is accredited by A2LA



www.geotesting.com

Triaxial Testing

Full Service Laboratory and Field Testing of Soil, Rock and Geosynthetics

We can control the following parameters while performing triaxial tests:

- back pressure saturation
- consolidation (isotropic, anisotropic, K_o)
- drained, undrained, or partly drained
- compression and extension
- static and cyclic loading
- any stress path
- elevated or decreased temperature
- specimen size (1.4" to 6" diameter)
- strain rate
- consolidated drain
- permeability



Fully automated triaxial test system

GTX has developed a special container for shipping undisturbed thin-walled tube samples which minimizes disturbances in sensitive soils. This container conforms to ASTM D4220, is reusable, lightweight and easy to use. The container's composition, shape and size ensures it is kept upright throughout the shipping process.



System D

Client: ABC Engineering Project Name: XYZ Bridge Project Location: Anywhere, USA Project Number: GTX-0000 Tested By: njh GeoTesting Checked By: jdt Boring ID: B-1 EXPRESS Prepar ation: intac Description: Moist, gray clay with sand Classification: Clay with sand Group Symbol: C Liquid Limit: 4 Plastic Limit: 22 Plasticity Index: 19 Estin CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767 den en la constance de la const 8000 Max. Obliquity c' = 119. psf psf 6000 6000 φ' = 28.8 DEVIATOR STRESS, tan φ' = 0.55 q, psf 4000 n 2000 4000 6000 8000 10000 12000 20 25 VERTICAL STRAIN, % p', psf S-1 Sample ID Depth, ft 69-71 ft 69-71 ft 69-71 ft Toot No. CU-CU-2 CU-Height, in Diameter, in 5.80 6.000 2.870 2.870 2.870 Moisture Content (from Cuttings), % 29.0 29.0 33.8 litial Dry Density, pcf Saturation (Wet Method), % 84.1 85.3 80.2 83.3 77.9 89.2 Void Ratio 1.01 0.977 1.02 32.6 32.4 89.9 34.1 87.8 Dry Density, po Shear Cross-sectional Area (Method A), in-6.254 6.280 6.351 Saturation, % 100.0 100.0 100.0 Before Void Ratio 0.880 0.875 0.920 Back Pressure, psf ical Effective Consol 1.048e+00 1837. 1.267e+004 3635. .484e+00 6836. lidation Stress, ps ntal Effective Consolida 1862 3.067 6863. 3.495 Vertical Strain after Consolidation, % 2.150 Volumetric Strain after Consolidation, % Time to 50% Consolidation, min 6.396 4.795 5.619 36.00 30.25 42.25 Shear Strength, psf Strain at Failure, % 1431 1900 2013 5.15 0.03200 0.0320 0.03200 Deviator Stress at Failure, psf Effective Minor Principal Stress at Failure, psf 2863 3800. 4026 1352 1725 2012 Effective Major Principal Stress at Failure, psf 5525 4215 0.95 B-Value 0.9 Notes: - Before Shear Saturation set to 100% for phase calculation - Structure Content determined by ASTM D2216. Remarks:

Typical CU Triaxial Test Series Output

