GeoTesting Express, Inc. (GTX), provides comprehensive service by offering in-plant sampling of geosynthetics at any geosynthetic manufacturing plant in the world. Our full service soil testing laboratory can provide moisture-density curves (Proctor) and grain size analysis testing of soils, which are often required in conjunction with interface shear tests involving soils.

GeoTesting Express (GTX) is fully equipped to perform interface and internal shear tests of geosynthetics and soil-geosynthetic interfaces. Interface and internal shear testing of geosynthetics is usually required when geosynthetic materials are used on sloping ground. The test measures peak and post-peak shear strength which allows the determination of peak and post-peak friction angles. Our fully automated interface shear test devices run tests twenty-four hours a day, seven days a week. These devices give us complete control of testing parameters such as normal load, consolidation/hydration time, shear rate and drainage conditions. We have equipment to apply normal loads as low as 0.5 psi (72 psf) to as high as 250 psi (36,000 psf). This flexibility and control allow us to replicate field conditions and perform the test to your exact requirements. We provide you with accurate test results and the quickest turnaround possible.

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Our professional staff has been performing and evaluating interface shear tests for over thirty years. Our engineers actively participate in the American Society for Testing and Materials (ASTM) and, in fact, have led the development of the interface shear testing standards (ASTM D5321 and D6243). We are accredited by the Geosynthetics Accreditation Institute - Laboratory Accreditation Program (GAI-LAP) and validated by the United States Army Corps of Engineers (USACE). Also, our soils laboratory is accredited by the American Association of State and Highway Transportation Officials (AASHTO) and the American Association for Laboratory Accreditation (A2LA). From our many years of experience on thousands of projects we have developed “best practices” for testing all types of geomaterials. For instance, while working with clay materials and geosynthetic clay liners (GCLs) the effects of pore pressure can greatly effect interface and internal shear test results. Our experience and background in soils testing helps us to understand and minimize these effects.

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Typical Shear Force vs. Displacement Curves for Three Normal Stresses

Typical Peak and Post Peak Strength Envelopes