Geocomp

Technologies to manage risk for infrastructure

Second Avenue Subway, NY

Tunnels

- Instrumentation and Monitoring
- Comprehensive Laboratory Testing
- GeoStructural Systems Design
- Active Risk Management™

Geocomp: Helping clients identify, manage, and mitigate underground risk

INSTRUMENTATION AND MONITORING

Geocomp provides real-time web-based monitoring services for dams and levees, tunnels, bridges, pipelines, buildings, excavation support systems, slopes, embankments, MSE walls, utilities, and foundations.

Our comprehensive data collection and visualization platform, *i*SiteCentral™, allows our clients to avoid costly delays and/or impact on adjacent structures through the implementation of real-time alarm programs that warn of unexpected performance.

Geocomp's *i*SiteCentral™ monitors ground and facility performance before, during, and after construction.

We are unique in our ability to monitor any type of structure in real-time.

GEOSTRUCTURAL SYSTEMS AND DESIGN

Geocomp couples its in-depth geotechnical knowledge of soil, rock, and water interaction with its understanding of structural performance to provide a comprehensive analysis of underground conditions and potential hazards.

We offer advanced analysis and detailed design solutions for the underground portions of any type of project. We provide engineering advice to improve geo-structural designs. We also evaluate existing conditions to determine the cause of unexpected performance and to design remedial measures.

We are unique in that we focus on the underground as a system made up of rock, soil, water, and structure that must be made to work together to gain optimal efficiency.

ACTIVE RISK MANAGEMENT™

Geocomp's concept of Active Risk Management™ provides an organized approach to identify, analyze, monitor, and respond to risks over the life of a project.

We help project teams minimize the probability and consequences of adverse events and maximize the probability and consequences of positive events.

Delayed construction operations can amount to enormous cost overruns; Active Risk Management™ looks to identify those operations that pose significant risk and develop approaches to reduce these risks.

We are unique in our emphasis on risk monitoring to detect emerging risks early.

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GeoTesting EXPRESS

GeoTesting Express, Inc., (GTX) provides the fastest turnaround time available for mechanical and physical properties testing on soils, rocks, and geosynthetics.

GTX can help prevent structural problems on every kind of construction project – from tunnels, bridges, and offshore oil rigs, to skyscrapers and landfills – by carefully testing what's used beneath the surface.

CHARACTERIZATION AND TESTING

DRILLABILITY TEST SUITE

Drillability testing aids in choosing methods and equipment to be used for tunneling and rock blasting projects. Tests included in the drillability test suite are the Brittleness Value (S_{20}), Sievers' J-Value (SJ), Abrasion Value (AV), and Abrasion Value Cutter Steel (AVS).

Drillability testing determines the Drilling Rate Index, Bit Wear Index, and Cutter Life Index. These indices help characterize rock by determining its brittleness, surface hardness, and wear capacity.

Drillability results enable the prediction of project advance rates and costs.

- **Brittleness Test Apparatus**

  An impact apparatus is used to determine the Brittleness Value (S_{20}).

- **Siever's Miniature Drill Apparatus**

  An impact apparatus is used to determine the Brittleness Value (S_{20}).

- **Abrasion Testing Apparatus**

  The wear capacity is determined using an abrasion testing apparatus where tungsten carbide and cutter steel test pieces are abraded by rock powder. Abrasion values are determined for each type of test piece.

TYPES OF SOIL TESTING

- Consolidation
- Direct and Simple Shear
- Triaxial
- Permeability
- Resonant Column/ Torsional Shear

TYPES OF ROCK TESTING

- Cerchar Abrasivity
- Direct & Indirect Tensile
- Direct Shear
- Unconfined Compression & Elastic Moduli
- Punch Penetration
- Point Load
- Triaxial

Accredited by: A2LA ACCREDITED, AAP AASHTO R18, Validated by the U.S. Army Corps of Engineers

Reference: GTX's drillability testing suite is based on NTNU's 13A-98 DRILLABILITY Test Methods, Dept. of Civil and Transport Engineering & SINTEF's DRI, BWI, CLI Standards, January 2003.

Representative Tunneling Projects

- Atlanta International Airport, GA
- Crenshaw/LAX Corridor LA Metro, CA
- DeKalb County Interplant Tunnel Phase II, GA
- East Side Access Subway, NY
- Governor's Island Water Main, NY
- Harbor Siphon Replacement, NY
- Indianapolis Deep Rock Tunnel, IN
- Central Artery/Tunnel, MA
- Chicago's TARP Tunnel, IL
- Doyle Drive, CA
- Dulles Airport Connector, VA
- Hudson Yards Gateway Tunnel, NY
- I-90 Tunnel, MA
- Kennesaw Connector, GA
- Midtown/Elizabeth River Tunnels, VA
- NEIS-GBIS Sewer Tunnel, CA
- North Dorchester Bay CSO Storage Tunnel, MA
- Omaha CSO Tunnel, NE
- Pittsburgh North Shore Connector, PA
- Port of Miami Tunnel, FL
- The Regional Connector, LA Metro, CA
- Second Avenue Subway, NY
- South Ferry Terminal Station, NY
- South Hartford Conveyance and Storage Tunnel, CT
- Storrow Drive Tunnel, MA
- Sunnydale Aux Sewer Tunnel, CA
- The Third Catskill and Delaware Aqueduct, NY
- THE Tunnel, NY/NJ
- Walnut Creek Tunnel, CA
- West Roxbury Tunnel, MA
- World Trade Center Rebuild, NY
- XTO Pedestrian Tunnel, TX

ABOUT GEOCOMP

Geocomp provides comprehensive geostructural design and performance monitoring services to clients across the United States and around the globe. Our professional staff combine in-depth understanding of structural and geotechnical material behavior with the latest in performance monitoring technologies to provide innovative and sound geostructural solutions - resulting in better control of risk and cost of projects.

Our subsidiary company, GeoTesting Express Inc. (GTX), provides state-of-the-art testing facilities to measure the mechanical and physical properties of soil, rock, geosynthetics, aggregate, concrete, and other geo-materials. GTX also provides field testing services to inspect, sample, test, document, and monitor quality on projects.

Geocomp Products manufactures, sells, and supports remote monitoring systems for both static and dynamic applications worldwide that provide web-based GIS access to instrument data used for real-time monitoring of structural performance during construction and operation. It also manufactures automated soil testing systems and custom designed pavement sensors and load cells used by commercial, governmental, and university laboratories.

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North Dorchester CSO, MA

World Trade Center, NY