From specialty soil and rock mechanics to onsite civil construction and materials conformance, Alliance employs some of the best people in our industry. Time delays prior to or during construction can end up being very expensive, we understand this and provide laboratory testing and on-site services with a view to getting the project started and keeping it moving forward.

Alliance is an established and highly respected Geotechnical and Environmental consultancy company with a proven track record in delivering and exceeding our clients’ expectations. Established in 2002, we have over 90 employees and have based our office and materials testing laboratory in Seven Hills NSW.
Soil & Rock Mechanics

Our specialty laboratory staff are industry leaders in this commercial sector that provide cutting edge geomechanical and geoenvironmental testing services for design, mining, construction and research. Our laboratory uses the latest testing equipment and software to deliver confidence in results. Customised Soil & Rock Mechanics testing for specific project, design or research requirements is our specialty.

The characterisation of soil and rock properties and evaluation of the strength, compressibility and permeability of these materials are essential for the successful completion of many earthworks design, construction and mining projects.

- Strength & Mechanical
- Physio-Chemical Testing
- Hydraulic
Earthworks & Compaction

Compaction testing compliance is vital to any civil project to ensure the construction materials and placement methods undertaken are meeting the design specification requirements. Our highly experienced field and laboratory staff provide a comprehensive range of earthworks related testing and inspections to Australian standards, TfNSW and RMS testing methods.

Compaction testing is achieved by establishing the in-situ density of the soil and comparing it to the maximum density as determined by a laboratory test. Conformance testing is vital to any earthworks project to ensure the construction materials and placement methods undertaken are meeting site specifications requirements.

- AS3798 Level 1 – Testing & Certification
- AS3798 Level 2 – Testing Conformance
- TfNSW / RMS L2 Accreditation
- NATA Accreditation - 15100
Materials Conformance

Our Seven Hills laboratory is accredited for a wide range of testing by The National Association of Testing Authorities (NATA). This provides our clients with the reassurance that the technical competence provided by our laboratory is to the highest standard.

We provide conformance testing for concrete, soil, rock, and aggregate to Australian Standards, TfNSW / RMS, ASTM and ISRM test methods and are fully supported by our specialty geomechanical testing section. With over 40 people working throughout our laboratory departments we provide a fast turnaround while maintaining the highest standards and quality in our test results.
Laboratory Testing

Strength & Mechanical
- Triaxial (UCS) - Cohesive Soil
- Triaxial (UU) - without pwp measurement
- Triaxial (CU) - with pwp measurement
- Triaxial (CD) - Consolidated Drained
- Soil Direct Shear - Peak
- Soil Direct Shear - Residual
- Soil Direct Shear - Constant Volume
- 1-D consolidation with optional loops/unloads/reloads/rebounds
- 1-D consolidation with creep
- Free Swell
- Collapse/Swell Strain
- Magnitude of Swell
- Stepped Consolidation after Free Swell or Collapse Strain
- Swelling Pressure Index
- Point Load Testing
- UCS Testing (Rock/Concrete)

Physio-Chemical
- Particle Density
- Particle Size Distribution with Hydrometer
- Soluble Salt Content of Soil
- Slake Durability
- Petrographic Examination & Quartz Content
- Rock Clay Mineralogy
- XRD (qualitative and SIROQUANT quantitative)
- SPOCAS (Acid Sulphate Soils)
- NAPP, NAG (Acid Mine Drainage)
- Asbestos
- Rock Porosity

Earthworks & Compaction
- Earthworks Level 1 Conformance
- Earthworks & Pavement Compaction Testing
- Transport for NSW - Roads and Maritime L2 Registered Testing Laboratory
- Soil Stabilisation
- Plate Load Testing
- Benkelman Beam Testing
- Test Roll Inspections
- Subgrade Inspections

Materials Conformance
- Thermal Resistivity / Conductivity
- CBR – California Bearing Ratio
- Plastic Index & Linear Shrinkage
- Grading - Particle Size Distribution
- Shrink Swell
- Emerson Class
- Soil Pre-Treatment / Artificial Weathering
- Soil Stabilisation
- Concrete Compressive Strength
- Aggregates
- Organic Impurities
- Flakiness - Proportional Calliper
- Bulk Density

Hydraulic Tests
- Triaxial Permeability - Constant Head
- Triaxial Permeability - Constant Flow
- Falling Head Permeability
- Emerson Class
- Pinhole Dispersion (Erodibility) Test
Key People

Ian Goldschmidt
Soil & Rock Mechanics Department Manager
Soil & Rock Mechanics

Ian is the Department Manager of our specialty geomechanical testing section responsible for client management, strategic development, and innovation. Ian has been a NATA Technical Assessor in Geotechnical and Civil Construction Materials Testing since 1996 for Soil & Rock Mechanics. Ian has over thirty years of experience in the Civil, Geotechnical, Environmental & Mining Industries in Australia & Internationally.

Dr. Bowei Yu
Soil & Rock Technical Manager
Soil & Rock Mechanics

Dr. Bowei Yu is our Technical Manager responsible for staff training, testing innovation and development. He has solid research and development backgrounds in soil mechanics, unsaturated soil mechanics, clay liners, contaminated investigations and remediations with over 7 years experience in geotechnical and geoenvironmental specialist testings. His research outcomes include 10 published technical papers and many global conference presentations.

Darien Law
Data Acquisition & Instrumentation
Soil & Rock Mechanics

Darien has a bachelor’s degree in Science, University of Sydney, majoring in Nanotechnology. He is responsible for Data Acquisition & Instrumentation software implementation and development for advanced and research projects for specialised testing.

John Moore
Laboratory Quality Manager
Earthworks & Compaction, Materials Conformance

John is the laboratory quality manager for both divisions, he manages the calibrations and servicing of all the laboratory’s testing equipment and supports the technical manager in making sure that the laboratory maintains its accreditation with NATA and Transport for NSW. John has 10 plus years of experience in construction materials testing.

Arni Ibricic
Earthworks Laboratory Manager
Earthworks & Compaction, Materials Conformance

Arni has over 12 years of construction materials testing experience and over 4 years in Laboratory management. He is currently the Earthworks Laboratory Manager here at Alliance Geotechnical. Arni has signatory status for a large scope of test methods within the laboratory, and has a wide range of experience in soils, aggregates, concrete, field testing and inspections. Arni has worked on a wide range of infrastructure, residential, non-residential and conformance testing projects.
Key People

Brett Bellingham
Operations Manager
Earthworks & Compaction, Materials Conformance

Brett is the operations manager for both divisions, he is responsible for the day to day running of the two laboratory operations. In this role Brett liaises with clients on technical and business issues. Ensures that the client’s time frames for processing testing projects and meeting budgetary expectations are met. Brett also manages the laboratory and field staff and the testing workload. Brett has 20 years of experience in construction materials testing.

Matthew Redfern
Earthworks Technical Manager
Earthworks & Compaction

Mathew has 15 years of experience working in the testing of construction materials in geotechnical and civil construction materials testing engineering field in Australia. He has extensive experience in the management Laboratory Quality Management Systems, staff training and development, and project management of field and laboratory testing for large infrastructure projects.

Shane Power
Field Resources Co-ordinator/Project Manager
Earthworks & Compaction

Shane’s role is the management of earthworks projects. Shane is the primary contact for our civil contractor clients who are requesting field testing, he allocates the work to our field staff and reports the results of the field testing, ensuring their compliance with the project’s specifications and ITP’s. Shane has 5 years of experience in construction materials testing.