CAPABILITY STATEMENT
Asset integrity and reliability • Australia

Right Solutions • Right Partner
alsglobal.com
ALS is one of Australia’s leading providers of asset reliability and integrity services. Our services and solutions assist our clients to maximise production, extend asset life and ensure safe and reliable plant operation.

ALS approaches asset health from a holistic perspective, considering both asset reliability and integrity. We start with an engineering approach – seeking to understand our clients asset management or maintenance issues first – then provide the right package of services and solutions to improve and sustain asset health.

ALS is an ISO9001, NATA and IRATA accredited service provider. Our services include non-destructive and mechanical testing as well as engineering failure analysis and investigation services. ALS is dedicated to assist constructors, manufacturers and asset owners in achieving compliance with any national or international standards and customer specifications. The extensive experience of our people and investment in leading technologies positions us to provide reliable advice and efficient services.

Our goal is to be the market leader in quality, service and technical capability. To achieve this we have multiple, modern, metallurgical and mechanical testing laboratories across Australia, with an excess of 600 engineers, metallurgists, inspectors and technicians delivering our comprehensive range of services. We have a proven track record in the power, oil and gas, petrochemical, minerals processing, mining, water and infrastructure industries offering a comprehensive range of high quality asset care services to help our clients make informed decisions.
Company overview

ALS Limited, an Australian Stock Exchange listed company (ASX:ALQ) that commenced operations in Queensland as Campbell Brothers in 1863. ALS Limited has over 11,000 staff operating from over 350 locations in 65 countries. We have facilities strategically located around the world, operating in Australia, Asia, North America, South America, Europe, the Middle East and Africa; and are one of the largest global analytical laboratory groups.

ALS Limited provides a broad range of technical services to following industries:
- Aerospace & defence
- Agriculture
- Civil infrastructure
- Commodity trading
- Construction
- Environmental, health & safety
- Consumer products
- Food
- Marine
- Mining & exploration
- Oil & gas
- Petrochemicals
- Pharmaceutical
- Power generation
- Pulp & paper
- Smelting & refining
- Transportation
- Water

ALS Limited has demonstrated over 40 years of strong business performance with global revenues exceeding $1.2 billion. ALS continues to remain at the forefront of the testing services industry, building an enviable reputation as the provider of choice on a global scale.
Our services

Our detailed capabilities include:

**Civil inspection & engineering**
We combine experienced professional engineers with market leading concrete diagnostic techniques. Our engineering services include:
- Condition assessment of concrete and steel structures
- Assessment of cause(s) of failure of civil structures
- Assistance with repair strategy and approaches
- Structural reviews.

**Concrete testing & assessment**
Market leading destructive and non-destructive testing of concrete to fully understand the condition of your concrete structures. Our testing services include:
- Spectral analysis of surface waves (SASW)
- Impact echo testing
- Ground penetrating radar
- Sonic echo / impact response (SEIR)
- Cross hole sonic logging
- Ultrasonic pulse velocity (UPV)
- Cover meter testing
- Concrete contamination ingress modelling
- Schmidt hammer.

**Coating inspection & engineering**
Qualified NACE coatings inspectors backed by materials and corrosion engineers to assess and specify your coatings. We offer:
- Specification and selection of coatings
- Coatings inspections including DFT, adhesion testing, holiday testing, surface roughness
- Investigation of coating failure
- Coatings repair strategy and approach.
Condition monitoring

Our comprehensive team of technicians and engineers covers the multiple disciplines of condition monitoring. We offer a comprehensive suite of tests including:

- Vibration analysis (in field and online)
- Thermography
- Gearbox, pump and motor acceptance testing
- A full suite of non-destructive testing, traditional and advanced (see below for more information in non-destructive testing section)
- Stress monitoring through strain gauging (see more in engineering and materials consulting)
- Qualified and experienced visual inspection by accredited inspectors (including API, AICIP, NACE)
- Enhanced monitoring and access technologies including 3D laser scanning, RPA / UAV (drones) and rope access

Supported with practical corrective services including:

- Laser alignment
- Dynamic balancing

And condition monitoring optimisation services including:

- Design and implementation of condition monitoring programs (for condition management) to ISO standards
- Design of optimised inspections programs based on ISO, AS and API standards
- Failure mode effects and criticality analysis (FMECA).

Engineering & materials consulting

We hold expertise in the disciplines of mechanical, civil, structural and materials engineering to provide you with the right answers. Services include:

- Assessment of remaining life (including our Remlife® software system)
- Assessment of damage mechanisms in operating components to prepare for optimal inspection programs
- Materials selection, review and advice and selection of materials to replace damaged items (materials interchangeability)
- Materials characterisation via metallography, using in house optical and scanning electron microscopes (SEM)
- Failure and root cause analysis
- Stress assessment through strain gauging and finite element modelling (FEA)
- Expert witness services through our network of principal consultants
- Positive material identification (PMI) and other site materials assessment services, including replication.
Non-destructive testing & inspection techniques (NDT, NDE, NDI)

With several hundred technicians nationally, we provide the largest capacity and the widest capability for non-destructive testing, under our NATA and ISO 9001 quality system. We provide:

- **Traditional NDT**
  - Magnetic particle, eddy current, film radiography, ultrasonic thickness testing and weld scanning

- **Advanced NDT**
  - Saturated low frequency eddy current (SLOFEC)
  - Magnetic flux leakage (MFL) for tanks
  - Pulsed eddy current (PEC) testing
  - RFT – bracelet corrosion detection
  - Phased array ultrasonic testing and time of flight diffraction (PAUT/ToFD)
  - Short and long range ultrasonics (SRUT and LRUT) and guided wave testing (GWT)
  - Electromagnetic acoustic transducers (EMAT)
  - Digital, computed and real time radiography (DR, CR and Lixi profiling)
  - Tube Inspection (IRIS / ET / RFT / Mag Bias / NFA)

- **Remote and enhanced visual inspection techniques**
  - Borescope inspection
  - RPA / UAV (drone inspection)
  - 3D laser scanning and 3D modelling of structures, including our WearManager® service for monitoring component wear.

Services are provided by a national team of IRATA rope access technicians where it’s appropriate to realise the significant access savings that rope access services can provide.

**Risk-based inspection**

Standards can allow opportunities to move outside of ‘statutory’ inspection intervals under sound engineering analysis. Our engineers can help you access these benefits. Our services:

- Assessment of the merit(s) of risk based inspection (RBI) programs for your industrial assets
- Implementation of RBI methods and programs
- Review and Implementation of non intrusive inspection programs (NII), inspecting assets without internal entry
- Preparation of preparation, inspection and test plans (PITPs) for your assets based on RBI analysis.

**Mechanical & destructive testing**

Market leading destructive testing labs allow us to test a broad range of products to multiple standards, under NATA and ISO accreditations. We provide:

- Tensile testing
- Impact testing (charpy, izod and more)
- Hardness testing
- Chemical analysis by OES and XRF and EDS (through scanning electron microscopy SEM), including carbon equivalent assessment
- Comprehensive welder compliance testing, including all tests for procedure and welder qualification (PQR, WPS), macros, bends, plus more
- Load testing of consumer products to international and Australian standards, including sample conditioning in many cases
- Fatigue and fracture mechanics tests.

Across metals and non-metal products (including HDPE).
Structural inspection & engineering

Backed by experienced principal engineers, we can assist in designing effective programs for understanding the condition of your structures:

• Optimised structural inspections – visual inspections and NDT inspections
• 3D laser scanning, both to understand changes in condition and to reverse engineer asset information in the absence of detailed drawings.
• Strain gauge assessment of structural loads
• Finite element analysis of structures
• Structural vibration assessment
• Corrosion assessment
• Coatings specifications and inspections.

Tank, vessel, piping & pressure plant inspection

Tanks, pipes and vessels are critical assets requiring specialty skills, experience and techniques. ALS has them covered. Our services:

• Qualified inspectors (API, AICIP as applicable)
• Design of inspection plans using risk based inspection principles
• Advanced and traditional techniques (refer non-destructing testing and techniques), used optimised for efficient tank inspection.
• Remaining life assessment
• Materials consulting and advice
• Failure investigation
• Corrosion mapping.

Weld inspection & engineering

ALS assist with weld inspection and engineering services to ensure that your welding projects are effectively executed. Our services:

• Qualified weld inspection (AS, WTIA, IIW, IWS qualifications)
• Weld process quality control audits
• Traditional and advanced NDT of welds to numerous standards
• Welding materials selection advice
• Weld repair strategy and approach
• Mechanical testing of welds
• Weld procedure qualification testing
• Welder qualification testing.

Training

As an approved training body with AINDT, ALS provides a range of accredited and informational training courses across the disciplines of:

• Non-destructive testing
• Classified plant management
• Vibration analysis
• Materials engineering
• Reliability based condition monitoring.

Our courses are delivered by highly experienced industry professionals and come with pre and post course support programs.