



Infrared Inspections and Technologies is Australia's leading mechanical infrared inspection and condition monitoring company.

INFRARED INSPECTIONS AND TECHNOLOGIES

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1. Contact Details

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ABN	21 602 071 607



2. Capability Information

Main Business Activities and Industries Served

Infrared Inspections and Technologies is Australia's leading mechanical infrared inspection and condition monitoring service provider, specialising in heavy mobile equipment and fixed plant in the mining and quarrying industries.

Infrared inspections, Vibration Analysis, Ultrasonic Bearing Analysis, Laser Shaft Alignment, In-Situ Balancing and Oil Analysis are all part of the services we provide as detailed below.

Products and Services

Infrared Inspections and Services:

On-site Infrared Inspection Services:

Infrared Inspections and Technologies (IIAT) carry's out detailed analysis of heavy mobile equipment and fixed plant by performing consistent, procedural Infrared Surveys on the equipment and then capturing the interpreted data in our 'Track and Trend' analytics program. This provides the client with a customised, detailed analysis and trend of every component on the machine or plant that the client requests.

These programs and reports are tailored to the client's requirements as part of our 'Client Care System (CCS)' and are delivered BEFORE the Thermographer leaves site. This allows the client to action any critical faults as they occur.

Electrical Surveys:

Thermography surveys of electrical infrastructure is recommended by most insurers on an annual or bi-annual basis. IIAT is able to deliver high quality, accurate reports on any anomalies within your electrical assets, including switchboards, motor control centres, power lines, transformers etc.

Infrared Training:

Infrared Inspections & Technologies has been approved as the Asia/Pacific training arm of Advanced Infrared Resources from Canada <https://www.infraredthermography.com> Wayne Ruddock, a thermographer with almost 40 years is highly regarded as one of the worlds best practitioners and trainers.

Advanced Infrared Resources Australia will be the training body operating in the Asia Pacific Area. We will offer on-site and generic Level 1 & 2 training courses to ISO 18436-7 as well as basic electrical and mechanical training.

Consultancy Services:

IIAT offers a consultancy service to those companies wishing to set up there own thermography programs. Let our experienced staff work with your team to set up and audit your infrared condition monitoring programs to ensure you are obtaining the best results.



Remote Analytics and Reporting Services:

If the client requires an interpretation and report service, IIAT can provide them with the correct thermal imaging equipment for the plant to be monitored, train their employees in the procedures of taking the images and through our server, analyse and report on the images through our track and trend system. This gives you the benefit of our experience and systems without the cost of getting us to site.

Underground Diesel Coal Mining Equipment Code D Inspections:

IIAT provides the most accurate, procedural Code D inspections in the country on underground diesel mining equipment.

Remote Monitoring:

There are a number of fixed placed camera solutions available with programmable military spec pan/tilt bases. IIAT is able to supply and fit the systems required to monitor your plant remotely. This technology is unparalleled in the monitoring of coal stockpiles, forestry and any stockpiled combustible material prone to spontaneous combustion.

Machine Vision Systems:

Improved vision for mobile machinery will reduce the instances of collisions and injuries due to unseen ground conditions and machinery interaction. These cost effective systems will provide preventions in injuries and machinery damage.

Aerial Monitoring:

Coming soon are our drone-mounted infrared monitoring systems. Monitor long conveyor systems and water pipes in shorter times, more accurately. Check sediment ponds and assess high risk areas with low risk means. These systems are under development and almost complete.

Vibration Analysis:

Our ISO 18436 Level 3 certified Vibration Analyst drives our VA team with a qualification as a mechanical engineer and experience in the following areas:

- Draglines
- Electric Face Shovels
- Fixed Plant - open cut and underground.
- Steel Mills.
- Power Generation & Refineries

Ultrasonic Testing:

IIAT has invested in the highest quality of UE Systems ultrasonic testing bearing testing with one of the 1st known simultaneous trials of Infrared, Vibration and Ultrasonic bearing analysis with outstanding results.

Ultrasonic testing is exceptional for detecting lubrication issues and bearing faults on mobile and fixed plant with particular success in low RPM rotation equipment.



Laser Shaft Alignment Capabilities:

- Train alignment such as Motor to Gearbox to Pump
- Geometrical laser alignments for straightness, flatness and setting up rolls to be square in steel mill.

In Situ Balancing

Single plane / dual plane balancing of fans, motors, couplings any rotating equipment. Have own special software for balancing.

Equipment

Infrared:

Infrared Inspections and Technologies utilises only the highest quality infrared cameras that can be coupled with powerful, telephoto lenses, allowing our trained personnel to accurately diagnose mobile and fixed plant from outside the operating circuit. Thermography is a highly effective, non-destructive, non-invasive method of diagnosis allowing ZERO HARM to come to the operator. Our capabilities include but are not limited to draglines, excavators, all mobile earthmoving equipment, fixed plant, wash plants and suspected tyre fires.

Vibration:

IAT employs the highest quality of analysers and software as below.

- Emerson 2140 4 channel Analyzer with transient capability & Emerson AMS 5.61 software
- Multichannel Bentley system if required for turbine shaft centerline.

Key people at Infrared Inspections and Technologies

The director of Infrared Inspections and Technologies, Jeff Erichsen, has been involved in the Mining and Construction industries for over 20 years in positions as both a Qualified Heavy Equipment Fitter and a Supervisor/Manager. He is also a certified Level 2 Thermographer with the Infrared Training Centre (ITC) in Sweden and a certified Category 1 Thermographer with the Australian Institute of Non-Destructive Testing (AINDT).

Having dedicated thousands of practical hours and innumerable theoretical and R&D hours from inception in 2012, Jeff has emerged as one of Australia's most experienced specialists in heavy mobile mining equipment and fixed plant. Jeff has also been voted onto the committee of AUSPTA (Australian Professional Thermography Association) & is invited to present his findings and methodologies regularly to the association members and visitors at their general meetings.

IAT employs and trains only experienced tradespeople and condition monitoring technicians with a range of qualifications such as Level 1 & 3 Thermographers, Level 2 & 3 Vibration Analysts, Level 1 & 2 Oil Analysts and Level 1 Ultrasonic Analysts.

Our small but dedicated team are able to service your needs at any level.



Specialised Capabilities

Infrared Inspections and Technologies is leading the way in mechanical applications for thermography in Australia. Whether it be on-site condition based monitoring, remote monitoring or implementing the latest drone technologies, we are available to work to your needs. Having a proven track record, saving our existing clients millions of dollars per annum, we can assist you in lowering your sites operating costs.

IIAT's experienced personnel also provide visual and operational inspections of all types of equipment, offering detailed reports to inform the client of equipment conditions.

Capacity

Whether your condition monitoring needs are generic, or specialised, we will source or customise equipment and software to suit their applications. Our team and our equipment is mobile and we are willing and able to service even the most remote regions to offer saving and solutions.

3. Track Record

Leading Projects Complete and Major Clients

Infrared Inspections and Technologies supplies infrared condition monitoring services to

- Glencore Coal Assets Australia
- Peabody Energy
- Anglo American
- Downer EDI Mining

Infrared Inspections and Technologies operates by three main principles within all our projects:

1. **ALWAYS** work to the highest safety standards. Delivering low risk, high return solutions.
2. **ALWAYS** identify all anomalies, thermal or otherwise to improve machine performance and reliability.
3. **ALWAYS** train and develop our personnel and company processes to the highest standards.



4. Management Systems

Safety Management System

Infrared Inspections and Technologies is fully committed to achieving and maintaining high standards of health and safety at our operations.

1. In all of our operations, our aim is to provide the safest and productive environment for our employees.
2. In our clients operations, we ensure that our employees understand and follow our client's safety management requirements, which include active participation in their safety initiatives.
3. Our vehicles, tooling and equipment are all supplied and maintained to the highest safety standards to ensure the safety of our employees and our clients.

These high standards will be achieved with both management and employees of the company, actively demonstrating commitment and involvement in the conduct of health and safety programs through our risk management processes and procedures.

We believe that all accidents and injuries are preventable by all staff diligently identifying, controlling and managing risk in the workplace. Management is responsible for developing, implementing and maintaining appropriate policies and procedures to manage risks. This is accomplished through providing leadership by example, resources and training required to achieve and by maintaining a workplace where risk is as low as reasonably achievable. This demonstrated commitment will develop a safety awareness culture and encourage commitment and involvement of all our personnel.

We require workplace health and safety to be regarded as an integral part of our company's operation. The safety of the public, sub-contractors and our own employees is the responsibility of all levels of management and is to be so demonstrated at all times.

Everyone is responsible for workplace health and safety.

Environment Management System

Infrared Inspections and Technologies is committed to responsible environmental management and pursuing acceptable and sound environmental practices within the community.

Infrared Inspections and Technologies will at all times operate within the requirements of environmental legislation and any licence conditions.

Infrared Inspections and Technologies will seek continuous improvement in performance by taking into account community concerns and advances in environmental knowledge. This commitment will extend to all areas of operation, including planning, implementation and



performance of all maintenance, transport and other operations performed directly by Infrared Inspections and Technologies or any persons working under their directive.

Management will provide any persons working under their directive with details of legislative and license requirements that apply to their work situation and to provide the necessary training and resources to carry out their responsibilities.

Infrared Inspections and Technologies requires any persons working under their directive to operate in an environmentally responsible manner, and to immediately communicate breaches of environmental practice to management. It is the responsibility of every person working under Viking Service's directive to immediately take all necessary steps to report any incident that breaches environmental legislation, license requirements or good practice.

Infrared Inspections and Technologies requires the active co-operation of all levels of management and all employees; to ensure the above goals are achieved at all times.

Quality Management System

1. Employees – we pride ourselves in employing the highest standard of people available and also in maintaining our relationship with those people to build their skills and therefore providing our customers with a better Service and employees with a brighter, more stable future.
2. Customers – providing a quality service to meet our customers' needs by not only supplying the right person for the position, but continually liaising with our client to ensure the continual performance of our employees.
3. Equipment – we pride ourselves in using and maintaining the most up to date equipment and tooling required for site.

Insurances

- Public Liability
- Professional Indemnity Insurance
- Work Cover Insurance
- Vehicle and Tooling Insurance

Rehabilitation Policy

Infrared Inspections and Technologies is committed to preventing injury and illness through providing a healthy and safe working environment and if required making occupational rehabilitation available for all employees who do sustain a work-related injury or illness.

This policy has been developed to comply with the requirements of relevant legislation and regulations covering workplace injury rehabilitation and management, and workers compensation.

The objectives of the policy are to:



- Promote and assist in the early recovery from injury or illness through participation in Infrared Inspections and Technologies Return to Work Program.
- Provide rehabilitation to all injured employees by progressively returning injured employees to the normal duties of their classification and workplace
- Establish rehabilitation as a normal expectation and practice for work related injuries with early intervention being taken, though a Worker's Compensation claim may yet to be determined.
- Inform employees of their rights and responsibilities in regard to their rehabilitation, and involve them in decisions and actions relating to their rehabilitation.
- Ensure the confidentiality of employees' information.

Infrared Inspections and Technologies employees are obliged to:

- Report all workplace injuries
- Submit to a physical examination by a Work Cover registered person
- Participate in discussions to allocate suitable duties as referred to by Work Cover
- Participate in rehabilitation as soon as possible after the injury for the period the worker is entitled to compensation
- Not to make false or misleading statements

The success of Workplace Rehabilitation relies on everyone participating in the earliest return to work possible for any injured person. This may require employee assistance to find suitable duties during the course of the rehabilitation period.

Customer Service and Market Response

Infrared Inspections and Technologies motto is *Quality Inspections, Real Time Solutions*. IIAT is constantly striving for perfection in all inspections by utilising our equipment, our experience and our senses. Our continuous improvement and training program ensures that we are THE most up-to-date, forward thinking company in the marketplace. This attitude is as much for our clients as it is our own business.

5. Working with Industry and Others

Infrared Inspections and Technologies plays an active role within industry, participating in a number of groups and networks including:

- AUSPTA (Australian Professional Thermography Association) of which Jeff Erichsen is an elected committee member.
- AINDT (Australian Institute of Non-Destructive Testing)
- Resource Industry Network (RIN)
- Bowen Basin Mining Club
- Various LinkedIn Groups:
 - Medical Infrared Thermography
 - Australian Coal Mining



- Infrared Systems for Industrial Applications & NDT
- Machine Reliability and Condition Monitoring
- Thermal Imaging for Inspection and Preventative Maintenance
- Plant Reliability and Maintenance Professionals
- Infrared Training Centre

Corporate Social Responsibility

Jeff Erichsen is a student at the Neurophysics Functional Movement Centre on the Gold Coast in Queensland, where he is studying for his qualification as a Neurotrician. He also contributes to the centres medical research division, working with founder Ken Ware collecting Infrared Data on patients at the centre and publishing his own studies on athletes utilising IR technology.

Jeff has always been involved in assisting youth and adults alike in their desire for general health and wellbeing through his extensive experience in Physical Training.

'We look forward to the opportunity to work with you in the future.'