



Thermal Imaging (Thermography) & Vibration Testing Services

Predictive Maintenance • Fault Detection • Reduced Downtime • Fire Risk Prevention

ALQAQNOOS Engineering provides professional Thermal Imaging (Thermography) and Vibration Testing Services for marine, offshore, oil & gas, industrial, power generation, and commercial facilities. These non-destructive testing (NDT) techniques allow early detection of electrical and mechanical defects before catastrophic failure occurs, significantly improving safety, reliability, and maintenance planning.

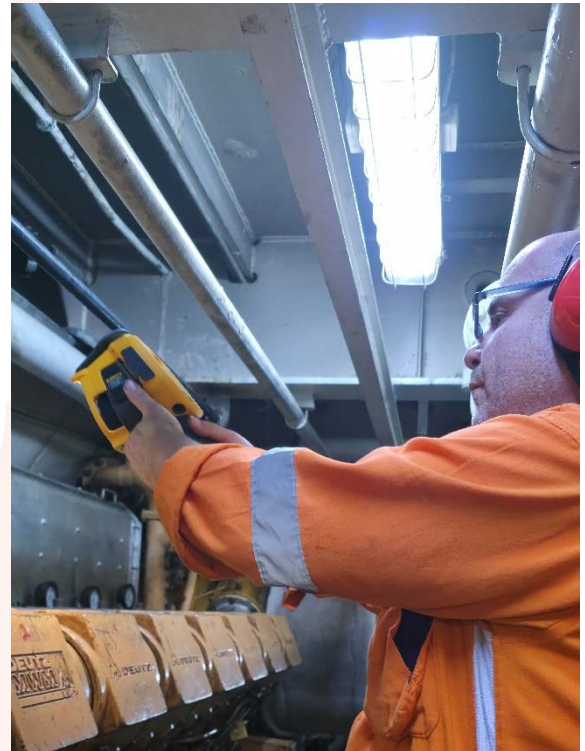
1. Thermal Imaging (Thermographic Survey)

Non-Contact Temperature Analysis for Electrical & Mechanical Systems

Thermal imaging surveys use infrared cameras to visualize surface temperature patterns, identifying abnormal heat signatures that indicate hidden defects, poor connections, overloads, friction, insulation failure, or mechanical stress.

What We Detect (Mechanical & Electrical Faults):

- Poor electrical connections
- Overloaded circuits
- Imbalanced electrical loads
- Insufficient cooling
- Equipment defects & malfunction
- Flow restrictions & blockages
- Leakage
- Scale & sediment build-up
- Misalignment-related heating
- Critical hot spots



Thermal Imaging for Mechanical Applications

Thermal surveys on mechanical equipment identify abnormal friction, lubrication failure, overload conditions, and bearing defects.



Typical Mechanical Equipment Covered:

- Fuel oil engines
- Motor gearboxes
- Bearing housings & couplings
- Heat exchangers
- Conveyor systems
- Steam lines & steam traps
- Hydraulic systems
- Cargo Oil Pumps (COP)
- Exhaust gas piping
- HVAC systems
- Propeller shafts, bearings & stern tubes



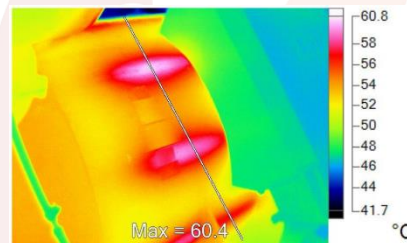
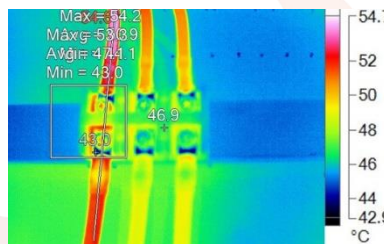
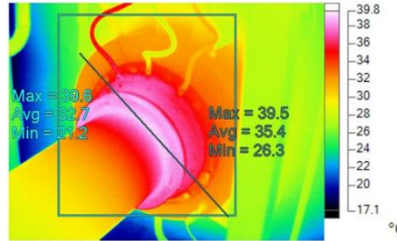
Thermal Imaging for Electrical Applications

Thermography is a powerful non-destructive test method used on energized electrical systems to detect potential failures long before breakdown occurs. It supports:

- New switchgear commissioning
- Predictive maintenance programs
- Insurance compliance
- Fire risk assessments

Typical Electrical Equipment Covered:

- Switchboards main & aux
- Terminal connections & junction boxes
- Power cables, terminations & busbars
- Electric motors & pumps
- Power factor correction panels
- Transformers
- UPS & battery systems
- PLC & automation panels



Key Benefits of Thermal Imaging

- Early fault detection
- Reduced fire risk
- Lower maintenance costs
- Reduced downtime
- Increased equipment reliability

2. Vibration Testing & Analysis Dynamic Machinery Health Monitoring

Vibration testing is used to assess the dynamic condition of rotating machinery, identifying mechanical faults such as imbalance, misalignment effects, looseness, bearing wear, and structural fatigue.

What We Identify Through Vibration Surveys:

- Shaft vibration
- Foundation bolt vibration
- Bearing wear
- Seal damage
- Coupling fatigue
- Metal fatigue in shafts & base frames
- Abnormal friction and mechanical loading
- Excessive power consumption

Vibration Testing Applications

- **Power Generation:** Turbine shafts & generator alignment condition
- **Marine:** Gearboxes, propeller shafts, stern tubes
- **Offshore:** Motors, generators, pumps
- **Manufacturing:** Machine trains, pumps, motors
- **Oil & Gas:** Alternators, base frames, heavy skids
- **Wind Energy:** Generator shafts & gearbox condition



Benefits of Vibration Testing

- Prolonged bearing life
- Reduced coupling stress
- Lower noise & vibration levels
- Reduced energy consumption
- Increased equipment productivity
- Reduced spare parts cost
- Avoidance of sudden breakdowns

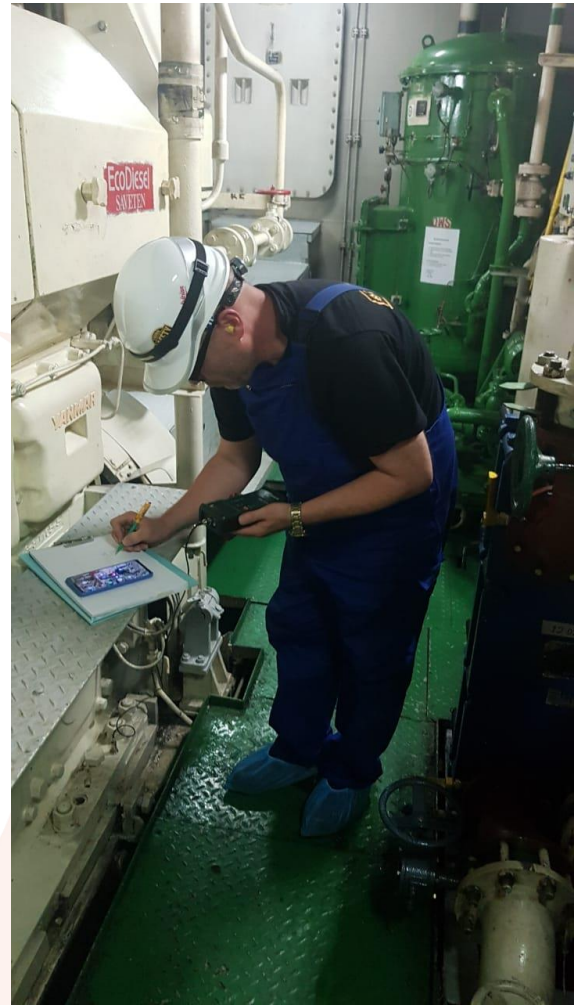
3. Industries We Serve

- Marine & Offshore
- Oil & Gas
- Power Generation
- Industrial Manufacturing
- Data Centers
- Warehouses & Storage Facilities

4. Reporting & Documentation

After each thermal and vibration inspection, ALQAQNOOS provides:

- Detailed diagnostic reports
- Annotated thermal images
- Vibration spectrum test
- Condition assessment summary
- Recommended corrective actions
- Digital PDF documentation.



5. Return on Investment (Based on Industry Data)



Thermography & Vibration monitoring deliver measurable financial benefits:

- 10× Return on Investment
- 25–30% reduction in maintenance cost
- 70–75% elimination of catastrophic breakdowns
- 35–45% reduction in downtime
- 20–25% improvement in production efficiency

6. Our Service Positioning

ALQAQNOOS acts as your:

- ✓ Predictive Maintenance Partner
- ✓ Marine & Industrial Diagnostic Specialist
- ✓ Non-Destructive Testing (NDT) Service Provider
- ✓ Condition Monitoring Solutions Provider



Your Partner for Predictive Maintenance & Equipment Reliability

With Thermal Imaging & Vibration Testing, **ALQAQNOOS** helps you move from reactive maintenance to predictive maintenance, ensuring:

- Safer operations
- Lower operational costs
- Higher equipment availability
- Reduced emergency breakdowns
- Long-term asset protection

