

**OUR ENGAGED EXPERTS  
PROVIDE INNOVATIVE  
SOLUTIONS TO FATIGUE  
AND FRACTURE TOUGHNESS  
TESTING**



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**ELEMENT ABERDEEN**

## WHO WE ARE

Element is one of the world's leading independent providers of materials and product qualification testing, inspection and certification services to the global Aerospace; Transportation & Industrials; Fire & Building Products; and Energy and Infrastructure sectors, where failure in service is simply not an option.

We exist to help our customers to make certain that the materials, products and systems that they make are safe, quality, compliant and ultimately fit for purpose, leveraging 200 years of testing experience and our global testing capabilities.

**As the leading testing provider of testing services to the Oil & Gas industry, Element Aberdeen has supported clients in the North Sea and worldwide with materials testing, corrosion testing, failure analysis, site services and welding services for over several decades.**

## OUR SERVICES

Element Aberdeen (formerly Materials Engineering Ltd) has more than 40 years of experience in the testing and evaluation of metallurgical materials, weldments, jointing (fusion and mechanical), products and components for applications in the global onshore/offshore oil and gas, energy, petrochemical, steel processing, aerospace, and transportation industries.

Working in evermore complex and challenging environments, our clients turn to Element Aberdeen for specialist expertise in qualifying their materials and manufacturing procedures to the various national, international and industry standards and Codes of Practice.

Our team of engaged experts possess significant experience and industry recognised expertise in the initiation and execution of materials testing programmes of work. This experience enables Element Aberdeen to develop innovative solutions to increasingly complex materials related challenges.

Our experts are supported by a team of highly skilled machining and testing personnel who in turn have access to one of the most comprehensively equipped testing laboratories of its type in the UK.

These teams are further supported by experienced Quality and Project Management personnel whose role it is to ensure that regardless of size, scale or complexity, our clients expectations are delivered accurately, in full and on schedule.

Element Aberdeen is the recognised group 'Centre of Excellence' for Fatigue and Fracture Toughness testing.

The Element Aberdeen laboratories Quality Management System and Procedures are audited and accredited by UKAS to ISO/IEC 17025, providing certainty to our clients that testing is compliant and results are accurate.



## OUR SERVICES

Element Aberdeen offers a comprehensive range of materials testing and consultancy services to its clients. The range of services includes:

- **Mechanical Testing** – including bend testing, charpy impact testing (-196 °C to +130 °C), tensile testing (-196 °C to 600 °C) with loads upto 2MN, hardness testing (Vickers, Rockwell, Brinell and Equotip), macro examination and fracture tests
- **Metallurgical Testing** – including micro-structural analysis, grain size, volume fraction, % ferrite, replication, modes of failure
- **Environmental Testing** - including tensile, fatigue, and fracture toughness testing carried out in service environments such as sour service or salt water.
- **Chemical Analysis** – including quantitative elemental analysis by Optical Emission Spectrometry (OES) and Positive Material Identification (PMI) by hand held XRF and portable OES on steels and nickel alloys
- **Fatigue & Fracture Toughness Testing** – including SENB, SENT and CT geometry CTOD testing, low cycle fatigue testing (LCF), fatigue crack growth rate testing (FCGR), frequency scan, steel catenary riser fatigue testing (SCRF), small scale straining
- **Engineering Critical Assessment (ECA)**
- **Failure Investigation and Analysis** - modes of failure, service failures, material selection advice and consultancy
- **Site Services** – both onshore and offshore including, replication testing, hardness testing, chemical analysis, ferrite check and positive material identification (PMI)

As we continue to invest in, and develop our materials testing capabilities and capacities we expand the scope of our service offering to our clients.

For a comprehensive list of our services, accreditations and approvals please visit [element.com](https://www.element.com)



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