



# ENVIRONMENTAL ENGINEERING



**SELEX GALILEO**

A Finmeccanica Company

**We are a UKAS accredited test house (test house number 0461) offering environmental and EMC testing to a very wide range of National and International standards whilst satisfying the UKAS accreditation regulations.**

Our environmental testing service provides world-class facilities, solutions and experienced personnel delivering environmental testing to all engineering sectors.

Our facility, which has been operating for over 40 years, supports Military EMC and both Military and Commercial environmental testing and can provide a comprehensive service enabling us to satisfy all customer test requirements. We are manned 12 hours per day, 7 days per week and can run many tests under automatic control on a 24 hour basis. Reduced impact on customer schedules can be achieved by operation of a drop off on Friday, collect on Monday service.

Project definition, design, development, reliability and qualification test programmes can be supported by the facility, along with production test requirements e.g. ESS- Environmental Stress Screening.



## CLIMATIC TESTING

Equipment designers need to ensure that designs are capable of operating in a diverse range of climatic environments, for example, hot humid, dry desert, arctic and high altitude conditions.

Climatic testing of products helps to verify that products will function and survive across the full range of their intended climatic environment, whether that environment is cold, humid, damp or hot.

We have test facilities that can simulate all climatic conditions covering various extremes including temperature, altitude, humidity, icing, temperature cycling, solar heating and corrosive atmospheres. They are continuously monitored by our central SCADA (computer-based data collection system).

### KEY FEATURES

- More than 20 chambers of various sizes (up to 12m<sup>3</sup>)
- Combined temperature, altitude & humidity facilities
- Thermal vibration facilities
- Thermal vacuum chamber for space simulation testing
- High rate of change temperature chambers (up to 30°C/minute)
- High channel count monitoring of temperatures
- Management of various types of test programmes
  - Design Proving, Qualification, Reliability Growth Programmes (RGP), Reliability Demonstration Testing (RDT), Environmental Stress Screening (ESS).

## DYNAMIC TESTING

Product designers must be aware and take account of the dynamic environment their products are expected to operate and survive in. This can include equipment fitted to aircraft, tracked vehicles, trains or helicopters. All of these platforms have very different vibration and shock environments which will have an impact on the design of the product.

Our dynamic test services provide the opportunity to simulate the dynamic environments encountered in the field. A wide range of types of vibration can be applied, e.g. Sine, Random, Sine on Random, Random on Random etc.

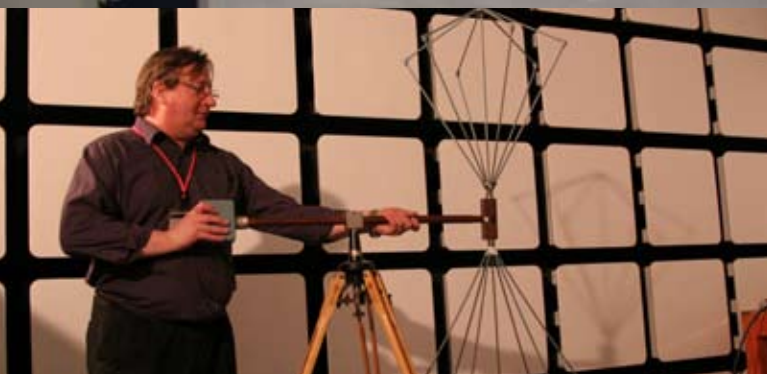
These tests can be combined with thermal testing if required. Shock testing can be conducted using a drop test facility or by closed loop control of a vibration generator enabling the simulation of complex shock pulses and use of methods such as Shock Response Spectra.

In addition we can support field data collection data exercises to enable the real operating environment in which an equipment has to operate to be quantified.

The testing is supported by sophisticated monitoring and data analysis capabilities including Operating Deflection Shape and Modal Analysis.

### KEY FEATURES

- More than 10 vibration generators of various sizes (up to 12,000lb thrust)
- Vertical and horizontal vibration capability
- Drop test facility
- Multiple channel monitoring of dynamic response
- Large mass jobs in excess of 900 kg can be catered for
- Highly trained personnel in formal handling requirements and a large store of varied lifting and crane equipment is available.



## ELECTROMAGNETIC COMPATIBILITY

The aim of Electromagnetic Compatibility (EMC) is to produce electronic systems which reduce undesired emissions to a minimum and have integrated design immunity against all external influences.

The EMC facility (for both military and commercial customers) provides a comprehensive service associated with all aspects of achieving compliance to all requirements. The facility is equipped to manage all phases; from project definition, design and development through to fully qualified test programmes.

During design development programmes, the provision of test assessment data on prototype models or structures forms a valuable contribution to the design process by the timely identification of potential problem areas.

Our equipment update programmes, early assessment and evaluation of trial modifications are the most cost effective way to achieve specified objectives.

We provide formal EMC Test Plans for our customer requirements and following completion of formal testing, a comprehensive Test Report is issued under the UKAS guideline.

The EMC facility can also provide 'on-site' electromagnetic surveys to individual customer requirements. These surveys are needed in order to obtain a complete ambient profile of the electromagnetic environment – an essential prerequisite to the installation of any specialised facility.

Limited Power line surge, swell and interrupt testing are also performed.

## SPECIALISTS TESTS

We are able to support tests which are not the usual high/low temperature or vibration/ shock tests. These include salt mist, fluid contamination, water spray, drip, immersion, icing, compass safe distance, loose cargo vibration, and vibration at temperature.

We can also provide forced cooling air supply solutions where equipment is normally cooled by conditioned aircraft air supplies.

The majority of these facilities have been designed and built in-house to meet unusual requests from customers, providing tests which are not routinely conducted. Usually there is an initial set up cost unless there is potential for further business whereby costs may be shared. With our own machine workshop and design capability, we are able to design and build one-off specialist facilities not offered elsewhere.

As a prime supplier of laser systems, we are able to take account of laser safety issues and have test facilities which incorporate laser interlocks.

We provide advice to customers unfamiliar with environmental testing, the preparation of test plans and procedures, and in the interpretation of national and international standards.

If we are unable to conduct a particular test we have extensive knowledge and contacts within the industry and can subcontract where necessary.

## CONTACT DETAILS

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To request a quotation, our latest brochure or to receive a call back from one of our engineers, please send your requirements to the contacts detailed above. Your contact details will be kept confidential and will only be used in connection with your enquiry.

Details of all tests covered by our UKAS accreditation can be found at  
[http://www.ukas.org/testing/lab\\_detail.asp?lab\\_id=2284&location\\_id=&vMenuOption=1](http://www.ukas.org/testing/lab_detail.asp?lab_id=2284&location_id=&vMenuOption=1)



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