



ENVIRONMENTAL TEST LAB

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THE REQUIREMENT

All products and their packaging are influenced by the climatic and dynamic environment in which they operate. Success in their market is enhanced knowing that the product has been validated to standards under various test conditions.

We offer advice to help define the test requirements appropriate for your product or industry as part of our service. Our capability is to conduct environmental tests to ensure the product performs as designed and meets the necessary national and international standards. The Environmental Test Lab (ETL) can replicate the climatic and dynamic conditions in which it will operate or during which it will be transported or stored.

THE SOLUTION

Independent verification by an accredited test house to defined standards is performed by the ETL. If needed, we provide advice to customers unfamiliar with environmental testing, such as the preparation of test plans and procedures, and the interpretation of national and international standards. We know how to simulate the required environment to satisfy a standard and prove a design meets your needs.

Working together with your team, we can develop appropriate test campaigns, provide qualification and certification services, verify package design and resilience and provide independent compliance to standards.

OUR FACILITIES

Climatic

The Climatic facilities 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). Facilities include:

- More than 20 climatic chambers of various sizes (up to 12m³)
- 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.





Dynamic

The 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. 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, field data collection exercises can be supported to enable the real operating environment in which equipment has to operate to be quantified. Dynamic testing is supported by sophisticated monitoring and data analysis capabilities including Operating Deflection Shape and Modal Analysis.

Specific facilities include:

- 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 to 700kg and above with bespoke support
- Mechanical handling facilitated by a wide range of lifting and handling equipment and fully trained.

EMC

The EMC facility provides a comprehensive service associated with all aspects of achieving compliance to 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.

The EMC facility also provides '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.

OUR CAPABILITIES

In addition to testing in areas or sectors that we are familiar, specialist tests may be required for the product or package.

This may be because of its particular nature or because of its novelty for the sector it will market in. Our experience shows that we can design new tests, combine tests or advise on jigs, fixtures or configurations that are bespoke to your requirements.

We support design proving, qualification, reliability growth programmes, reliability demonstration testing, and environmental stress screening (ESS).

EXPERIENCE

Sector experience extends to:

- Electronics
- Electro-optics
- Micro-electromechanical
- Food and drink packaging
- Medical equipment
- Space electronics and arrays
- Oil and gas sensors
- Renewable energy
- Powers systems
- Bespoke and miscellaneous requests.



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