



## RELIABILITY TESTING IS YOUR PRODUCT AS GOOD AS YOU PROMISE?

Reliability testing ensures a product works as expected in normal and unusual situations. Such tests enable producers and retailers to estimate a product's life span and identify the causes of failures. SGS can carry out reliability measurements against standards and regulations applicable in a specific market. Furthermore, our reliability services can be adapted to perform testing to manufacturer or retailer-specific performance requirements. You will reduce product recall risks and cut costs before entering the market.



## HALT & HASS

HALT (High Accelerated Life Test) and HASS (Highly Accelerated Stress Screen) testing enable manufacturers to quickly and efficiently identify any product weakness both pre and post production.

HALT: Usually applied during the design progress and enables you to quickly identify any product weakness and enabling changes to be made before industrial manufacturing begins. The following test stresses are usually applied: Temperature Step Stress – Hot and Cold, Rapid Thermal Cycles, Vibration Step Stress and Combined Environmental Stress (Vibration, Thermal Cycles)

HASS: Detect product weakness post production with HASS. Usually carried out on site prior to dispatch HASS is used to defect faulty goods.

## FAILURE & DAMAGE ANALYSIS

In the event that something goes wrong SGS offers a whole range of failure testing and damage analysis services to help you understand what happened. Our failure analysis report will help you take measures to prevent failures.

Our experienced staff and high-performance equipment enable us to pinpoint and identify failures that could cause malfunctions, quality problems and reduced reliability.

## CALCULATION & ANALYSIS

Reliability calculation and analysis takes reliability testing further. It can yield valuable information and enable manufacturers to predict how products will react in the longer term. This is particularly useful where the life term of a product, or its sheer physical size, cannot be meaningfully covered by accelerated testing. SGS's reliability calculation uses theoretical prediction and analysis for all manner of products from the smallest items to large scale projects, such as a telecommunication network. As a paper exercise additional factors such as redundancy can be taken into account.

## PRODUCT CHARACTERIZATION

Understanding the mechanical and electrical properties of E&E (electrical & electronic) products is key to determining the quality of your goods and judging the effect of environmental stresses and aging on them. At SGS we perform product characterization tests to determine the electrical, acoustic and mechanical properties of material components.

## CONTACT

SGS is your global partner to provide you with tailored services and consulting solutions that meet your needs, objectives and budget. For more information on how our Reliability services can help you, visit [www.sgs.com/electrical-reliability](http://www.sgs.com/electrical-reliability). Or contact us: [ee.global@sgs.com](mailto:ee.global@sgs.com).

## ENVIRONMENTAL SIMULATION & ANALYSIS

Globalization means that your products may be distributed and sold worldwide. As a result they need to be designed to withstand and successfully function in all environmental conditions. At SGS we can help, our environmental testing labs help you to evaluate the potential impact of the environment on the way products function. Our experts can carry out environmental simulations for impacts including mechanical, climate, corrosion, mechanical loads and other miscellaneous environmental factors.

## WHEN IT COMES TO CONSUMER ELECTRONICS

Manufacturers and retailers should only place safe products on the market. Through our testing we help you make your product go the extra mile:

Manufacturers can improve their products based on test results data.

Poorly performing products can be redesigned or removed from the market.

Our global network, extensive resources and knowledge of the retail industry allows us to provide reliable performance services to large and small retailers.

We ensure that all products in a lot meet their quality and durability expectations and those of consumers.