Accelerated robustness test

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By stressing your products under extreme conditions, you can identify your product's weaknesses in a timely manner and make any necessary adjustments to your product before launching it. This allows your product to meet even the most demanding requirements from your customers, and you can demonstrate a substantial safety margin for the performance of your products. You will get fewer product complaints and you can collect more orders from customers who have special requirements for product robustness.

FORCE Technology helps you with advice and guidance on selecting the most effective robustness test for your products, and we can help you make a strategy for testing your product under extreme conditions. Furthermore, we can implement the relevant robustness tests.

When we push a product’s robustness to the utmost - far beyond the usual standards and specifications - we call this an accelerated robustness test. We offer several different types of accelerated robustness tests:

**HALT (Highly Accelerated Limit Testing)** finds newly developed products’ weakest points at an early time point, so you can adjust the product design in time.

**HASS (Highly Accelerated Stress Screening)** screens your product for any component failure and manufacturing faults, which occurred during the production process.

Accelerated robustness tests cannot replace all other forms of testing, but it is the most effective method for improving the robustness of a product and ensuring your production and sales start quickly.

FORCE Technology has a wide range of laboratories and facilities that are able to test robustness. We have some of the industry’s most experienced and knowledgeable testing experts who focus on that you end up with a complete and successful result.

By using FORCE Technology as your partner for robustness test you will get:

- Expert advice about the test procedure
- The possibility to expand the testing to include other parameters - such as EMC (Electromagnetic Compatibility), corrosion and moisture

**Accelerated robustness tests (thermo-mechanical HALT) may include:**

- Temperature Characterisation: low and high temperature; search for functionality and destruction limits - power ON/OFF
- Rapid temperature cycling between the found limits
- Vibrations Characterisation
- Combined impact of temperature cycling and vibration
- Combined temperature/humidity impact and coldness/drop impact

**SPECIFICATIONS**

FORCE Technology has dedicated HALT and HASS testing equipment, used to thermomechanically test the impact of temperature, temperature changes, and vibration of the products you want tested.

**Dimensions**

<table>
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<th>L x W x H</th>
<th>Table (L x W)</th>
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<tr>
<td>1.06 x 1.06 x 1.01 m</td>
<td>0.91 x 0.91</td>
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**Temperature**

-100 °C to +200 °C, up to 60 °C/min.

**Vibration**

60 grms (2-10 kHz), 6-axis vibration

In addition, if required, you can take advantage of FORCE Technology’s broad range of other testing equipment, such as thermal shock in liquid baths, vibration testing equipment for bounce test (also known as dance test) and climate chambers with the possibility of direct change between extreme cold and high temperatures/high humidity.

**MORE INFORMATION**

FORCE Technology can offer guidance and specialist knowledge about robustness test during all phases, before, during and after testing, including during the concept and design development phase, as well as guidance in connection with troubleshooting on existing products and production equipment.

Contact us to find out more: tel. +45 43 25 14 50.

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Aplying HALT in our development process has been extremely educational. HALT has been found to be extremely beneficial to designing sensors that can handle harsh, real-life conditions.

– Lars Fisker Pawlik, HF Jensen A/S, used HALT in the development of the sensors for the MAN Diesel motors.
**STRAIGHT ADVANTAGES**

With an accelerated robustness test you will gain a number of strategic advantages:

- More reliable operation of products and equipment
- Lower risk of product complaints and repair costs
- The ability to meet your customers’ strict requirements for product robustness

**INDUSTRIES**

An accelerated robustness test is relevant if you manufacture high volume products, products at a small volume, but high value, or products where failure conditions are critical. We can help all businesses regardless of industry, and in addition we have special expertise in the following industries:

- Medical devices and welfare
- Military & aerospace
- IT and telecom
- Automotive and transportation

**FACTS**

- Hørsholm Nordborg
- IEC 62506
SIMILAR SERVICES
FORCE Technology offers a wide range of other test services, please see below. In addition, we can offer a customised solution where we perform tests across several parameters within a single process, according to your needs. Contact us to find out more: +45 43 25 14 50.

ACCELERATED EMC TEST
ACCELERATED ROBUSTNESS TEST
ACCELERATED RELIABILITY TEST

ACCREDITED CALIBRATION OF HUMIDITY SENSORS
ACCREDITED MECHANICAL TEST
ACCREDITED INGRESS PROTECTION (IP)

ACCREDITED CLIMATIC TEST
ACCREDITED EMC TEST
ADVICE ABOUT PRODUCT APPROVALS

WIRELESS APPROVAL AND PERFORMANCE TEST
ACCREDITED PACKAGING TEST
TENSILE AND FATIGUE TEST

GUIDANCE ABOUT MARKET ACCESS FOR MEDICAL DEVICES
EMC PRE-TEST: DO-IT-YOURSELF
ELECTRICAL SAFETY TEST

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