

# Tensile and Compression Testing

A full range of cost-effective environmental testing services



Tensile and Compression testing is the generic name for many types of tests such as pull test, tension test, load resistance test, and many more. This assessment usually occurs during the design verification testing stage so device manufacturers can determine if the design can withstand mechanical forces. The forces applied can be axial, radial, push, pull, torque, bend or a combination of these and others.

The stress on the device can help determine poor workmanship or faulty design. In the case of qualification testing, one may subject their product to a series of tests starting with tensile and compression testing, and subsequently temperature testing, thermal shock testing, or altitude testing. This may show more evidence of damage caused by tensile and compression.

Tensile testing laboratories will have a method of clamping on the device under test. There will also be equipment used to apply the force, which will differ depending on the specific test conducted. It's also typical to measure conditions such as performance or the applied force vs time chart.

Along with hardness, weight or dimension, tensile and compression testing is common for analyzing material properties. Components used in products should also be subjected to testing. For example, termini and cables are pushed and pulled to determine the force of the insertion and removal point, respectively.

Our laboratory covers a wide range of capabilities including ASTM D 638 for tensile properties of plastics and FED-STD-228 (method 3021 and 3031) for jacket material tensile strength and elongation. All test results (force/displacement/time, etc) are read electronically via digital interface and can be provided in raw electronic format for further processing.



## Climatic

- Temperature
- Temperature shock, air-air, liquid-liquid
- Humidity, 5% to 98% RH
- Walk-in temperature and humidity chambers
- Altitude
- Icing
- Thermal vacuum
- Hydrostatic and pressure cycling

## Mechanical

- Vibration
- SRS and classical shock
- Impact and drop
- Tensile and compression
- Cable elongation and tensile
- Fiber micro/macro bending and coating strip force
- Various flex, twist and stress tests
- Custom mechanical setups for various applications

## Materials

- Salt fog and cyclic corrosion
- UV and weathering
- Chemical and fungus resistance
- Fluid and ground water immersion
- Sand and dust
- Rain (wind driven)
- Flammability and fire wall
- Rockwell hardness

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