

Measurement of: Tensile and Compression strength of materials

Equipment: Universal tensile and compression testing machine,
Model: 4204, M/S Instron, USA.

Property Measured: Tensile and compression strength of materials

Photograph (small size)



Basic Principle: The specimen as per ASTM standards (Tensile and Compression) is placed in the machine between the grips and an extensometer is attached with the same. This extensometer records the change in gauge length during the test. However, this method not only records the change in length of the specimen but also all other extending / elastic components of the testing machine. Finally the output of data will be provided in the form of Stress vs strain.

Capabilities: Maximum load capacity of the machine is 50 KN.

Sample Requirement: Solid samples (Rectangular shape for tensile test, Round shape samples for compression test), no liquid samples

- Samples for Tensile test to be made as per ASTM standards. This standard may be different for different processing routes (Powder metallurgy, Casting route etc.,)
- For compression test samples to be made as per ASTM standard ASTM: E9-09, with an aspect ratio of Length/Diameter ~2.5.