

ENGINEERING THE EXCELLENCE

A first-of-its kind Material Testing Lab

MATERIAL TEST CENTER (MTC)

Whether you need to verify material characteristics, identify defects, analyze failures, improve new materials or perform basic research on the strength of materials, efficient materials testing is of paramount importance to develop higher quality products. L&T Technology Services (LTTS) Material Testing Center (MTC) is a state-of-the-art lab infrastructure that offers a full array of plastics and raw materials testing services to support R&D, material selection, quality control and failure investigation. Test specimens are prepared according to ISO/ASTM standards in our in-house Injection Machine Shop which inspects calibration and dimensional services to verify the reliability and accuracy of machine products and parts.

WHAT WE DO



SPECIMEN PREPARATION

- In-house **Injection molding shop (IMS)** – capable of preparing ISO / ASTM standard multipurpose specimens using Axxicon mold.
- Custom made Shrinkage Mold Specimens.



MATERIAL TESTING

PHYSICAL & MECHANICAL TESTING: Helps in measuring material properties and provides characteristics data such as strength, modulus and impact resistance, and ensures that the material complies with industry specifications.

Density testing | Tensile testing | Flexural testing | Impact testing

THERMAL TESTING: It measures the characterization of a plastic material and qualify it for heat resistant at extreme thermal condition.

Heat Distortion Temperature (HDT) testing

RHEOLOGICAL TESTING: Measures the deformation of matter under the influence of imposed stress and analyzes the internal response of materials to forces.

Melt flow testing

WEATHERING TESTING: Determines the weathering characteristics of the material and improves the durability to monitor mechanical properties.

Heat Ageing Testing



FAILURE ANALYSIS

- **Muffle furnace:** Material composition analysis
- Thermal degradation of Materials
- Optical Microscope for surface analysis

WHAT MAKES US DIFFERENT

- **Injection molding shop (IMS)** – Capable of preparing test specimen using international standard mold.
- **Conditioning chamber** – Enables the test specimen as well as tested material regain its original form with a maturity level to go for further production.
- **Dehumidified hopper dryer** – Enables to keep drying the raw materials simultaneously while molding take place.
- Capable to test -70 deg C to 250 deg C (Tensile and flexural) with Integrated chamber using liquid nitrogen.
- Use video extensometer for accurate measurement of tensile elongation.
- Test area with tight control of temperature & humidity.



BUSINESS BENEFITS



60% reduction in Material testing lead time.



Delivered an annual cost savings of over **50%**.



Created central material database to help make **real-time informed decision** among stakeholders.



ENGINEERING THE CHANGE