



MATERIALS ANALYSIS TEST LABORATORY

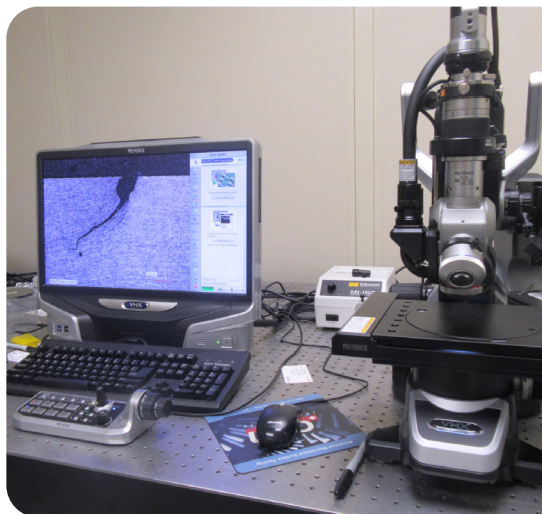
LABORATORY INFORMATION FACT SHEET

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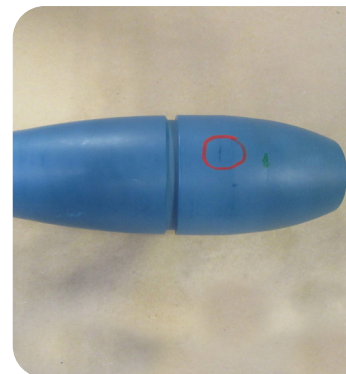
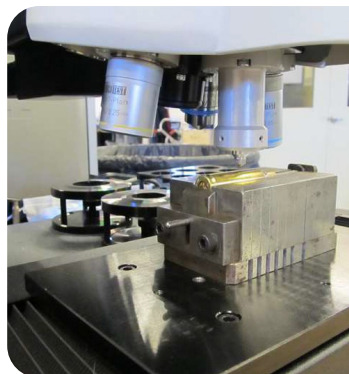


The Materials Analysis Test Lab is focused on providing Combat Capabilities Development Command Armaments Center (DEVCOM AC) with an in-house means of testing, assessing and characterizing the processing and properties of materials used in Department of Defense (DoD) systems.

TECHNOLOGY/FACILITY DESCRIPTION:

There are three main work areas: the Metallography Lab, the Mechanical Test Lab, and the Salt Spray Lab. The metallography lab focuses on

characterization of material composition, hardness and microstructure as well as failure analysis. This lab utilizes techniques such as x-ray fluorescence, optical emission spectroscopy, optical and electron microscopy, macro and micro hardness testing and energy dispersive spectroscopy to analyze prepared metallographic samples. The mechanical test lab focuses on mechanical property characterization as well as fatigue and mechanical failure simulation. Testing capabilities include tensions, compression, torsion, fatigue, fracture toughness and hydrostatic pressure. The salt spray lab focuses on the testing and evaluation of protective finishes. Lab capabilities include salt spray testing, film thickness measurements, adhesion, flexibility, and gloss measurements.



EQUIPMENT AND EXPERTISE AVAILABLE:

- Chemical Analysis - handheld x-ray fluorescence unit, arc-spark optical emission spectrometer, LECO carbon/sulfur analyzer, energy dispersive spectroscopy system
- Metallographic Sample Prep - band saw, abrasive saws, belt grinder, hot mounting presses, auto-polisher
- Mechanical Testing - 5, 10, 20, 50, and 100 kip servo hydraulic test frames, hydrostatic pressure chamber
- Hardness Testing - Brinell hardness tester, regular and superficial Rockwell hardness tester, Vickers and Knoop automated microhardness tester
- Coating Testing & Evaluation - salt spray chambers, magnetic and eddy current thickness gages, bend tester, impact tester, gloss meter, and adhesion testing
- Microscopy - binocular stereo-microscope, light-optical microscope, scanning electron microscope
- Characterization of any new or novelty materials
- Mechanical property characterization and fracture simulation
- Compositional, Hardness and microstructural characterization
- Failure analysis of broken parts
- Microscopy
- Heat treating of materials