# METALLOGRAPHY LABORATORY

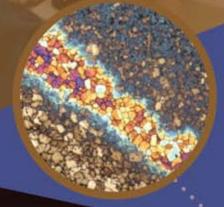
Metallurgical testing of metallic materials, steels, alloys and their welds.

Main tests include:

- Hardness Testing Micro Hardness Testing and Profiles
  Case Depth Measurements.
- Microstructural characterization of all kind of steels and other alloys, Creep Damage Assessment, Image Analysis and Macrostructure evaluation.
- Forensics analysis and steel alloy identification (including PMI with portable XRF analyzers).
- On-site metallography (using replication) and hardness measurements (UCI & Leeb).
- Welding engineer and Welding inspection Services (IWE-CSWIP certification).



Innovation Hub



#### Main equipment

- Fully equipped metallography laboratory for sample preparation, including sectioning, hot mounting, automated mechanical grinding & polishing, electrolytic polishing & etching.
- Hardness tester EMCO TEST M4C and Micro hardness tester with automatic stage STRUERS DURAMIN 20.
- Stereoscope OLYMPUS SZX10 and Optical microscope ZEISS AXIOTECH HAL 100.
- Image analysis software: Olympus Stream Aquinto A4i Zeiss ZEN
- Portable hardness testers, optical microscopes, mass spectrometers.

# APPLIED PHYSICS LABORATORY

Non-destructive testing (NDT) by certified technical personnel (ISO 9712/2012). Technical support for NDT issues by Level III inspectors. Main tests:

- Visual, magnetic particle, liquid penetrant, conventional ultrasound, phased arrays, TOFD, ultrasonic thickness measurements and eddy current.
- Paint inspection (Thickness, Cross Hatch and Pull-off test).
- Measurement of physical and mechanical properties of rubber products (abrasion resistance, density and specific gravity, Shore A & D hardness and rebound resilience).
- Porosity test for electrical power insulators.

#### **Main Equipment**

- Conventional ultrasound devices GE USM GO, SONOSCREEN ST10.
- Phased Array and TOFD instruments SONATEST PRISMA.
- Weld scanner PHOENIX MULTIMAG.
- Electromagnets (YOKE) and UV LED lamps MR-CHEMIE, LABINO.
- Eddy current devices GE PHASEC 3D.
- Endoscope GE MENTOR VISUAL IQ.
- Coating thickness tester KARL DEUTSCH LEPTOSKOP 2042.
- Cross Hatch and Pull-off tester ELCOMETER.

### MATERIALS STRENGTH LABORATORY

All conventional mechanical tests are performed to determine the mechanical properties of various materials, their products and complex structures. Custom-made solutions can be provided. Main tests include:

- Tensile, bending, impact, compression tests on metallic and plastic specimens, as well as on welds, ribbed steel bars, synthetic suspension insulators, cables, personal protection equipment, fiberglass ladders, wooden poles, conductors, chains, etc.
- Hydraulic tests of pressurized vessels and tubes.
- Thermomechanical test of medium and low voltage insulators.

#### Main equipment

- Tensile testing machines: Testometric 50 KN, Galdabini 500 KN and VEB 1.000 KN.
- Impact testing machine ZWICK 300 Joules.
- Outdoors tensile testing device 30 T 28 meters.
- Impact & perforation testing machine (for helmets).
- Hydraulic pressure testing machine Lombardini 500 bar.
- Impact testing machine for elevator buffers.
- Dynamometers DILLON (1 5 20 tn).





## **INSPECTION BODY**

"Type B" accredited body pursuant to ELOT EN ISO/IEC 17020:2012 (Hellenic Accreditation System certificate 343-3) with certified inspectors carrying out inspections on the following machinery:

- a) Lifting equipment and devices, as required by National Regulations (Government Gazette 1186/B/25.08.2003. Such equipment includes:
  - Mobile Cranes, Bridge Cranes and any other type of Lifting and Hoisting Machinery.
  - Hydraulic Devices, Lifting Platforms, Fork Lifts, Mobile Basket Cranes, and Work Platforms.
- b) Simple pressure vessels, as required by National Regulations (Government Gazette 673/B/02.09.1993).

### **Primary inspection equipment**

- Digital Dynamometers 10 20 25 tn (DILLON).
- Digital Laser Range Finders (BOSCH & STANLEY).
- Digital Wind Gauge (TESTO)
- Electronic and optical goniometer (WYLER).
- Earth Testers (METREL).
- Mobile Pumps (ROTHENBERGER & VIRAX).
- Borescope (EVEREST VIT).
- Ultrasonic Devices (TRITEX).