



LABORATORY TESTING INC.

2331 Topaz Drive, Hatfield, PA 19440

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A Publication from *Laboratory Testing Inc.*

Immersion UT for Oversized Materials

Laboratory Testing recently expanded ultrasonic testing (UT) capabilities with a 24 ft. x 5 ft. immersion tank. A two-axis, five-channel A, B, and C scan immersion ultrasound system was installed to perform the testing of round material up to 20 ft. long with a diameter up to 24 in., and flat material up to 20 ft. long and 4 ft. wide, with a weight limit of 5000 lbs. The new immersion tank is equipped with a computer-based recording system, which generates detailed printouts of test data and results.

Our lab already had extensive capabilities for immersion UT inspection with three high-speed immersion machines for round stock between 1/8 in. and 6 5/8 in. diameter, and lengths up to 75 ft. The contact inspection method was used for ultrasonic testing of material outside these size and shape ranges. The new immersion capabilities provide a speed and reliability advantage over the contact method, as well as chart recording and printouts not available with contact UT.

According to Phil Trach, NDT Technology Coordinator and ASNT NDT Level III, "This new system greatly expands the scope of LTI's immersion capabilities, provides faster turnaround for large volume, repetitive orders and adds a control factor for higher accuracy that is not available with the contact method of inspection. Our long-term experience with immersion ultrasound

and with inspection of large-diameter and very heavy pieces makes this a natural extension of ultrasonic capabilities for Laboratory Testing Inc."



Tractor trailer delivering 24' x 5' Immersion Tank



Computer-based recording system

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LAB NEWS

Reliable Testing for Defects & Measurement

Ultrasonic Testing (UT) is an inspection method used to find internal and external defects or to measure wall thickness discontinuities in materials and parts. The process is nondestructive, which means the test item is not damaged during testing.

The Process

An ultrasound probe connected to a diagnostic machine passes over the item being inspected and transmits high-frequency sound waves into the item. A defect or inconsistency will cause some of the energy to be reflected. This reflected signal can be processed to give useful information about the condition which caused the reflection.

Ultrasonic testing can be performed either by the immersion or contact methods. Immersion

inspections take place in a liquid which conducts the beam of sound between the probe and test material. With the contact method, an ultrasonic probe emitting sound waves is run over the surface of the test piece. Immersion is preferred in many applications because it is



Three UT immersion systems for round materials up to 75 ft. long

generally faster, more accurate and eliminates the need for direct contact with the test item.

Inspections at LTI

LTI offers both immersion and contact inspections for tubing, pipe, bar, plate and a wide-variety of metal parts in all shapes and sizes. The immersion method is provided for large materials up to 20 ft. long (by 4' flat or 2' round) or for round stock up to 75 ft. long with diameters between 1/8 in. and 6 5/8 in. Materials this large are safely handled in our 26,000 sq. ft. NDT and receiving area using 3-ton cranes and heavy-duty forklifts.

Our technicians provide chart recording and file maintenance with all immersion inspections. We have an extensive library of tube, pipe, bar and plate ultrasonic reference standards available, and can readily obtain additional reference standards in nearly any configuration.

More Sensitive Analysis of Elements

An additional ICP Spectrometer (Inductively-Coupled Plasma) was recently purchased by our Chemistry Lab to increase capacity for elemental analysis of samples. The new ICP provides greater throughput for samples, and can analyze 52 elements in the periodic table. It also has a larger optic than the lab's other equipment, allowing for greater resolution of background from wavelengths and providing a greater number of analytical wavelengths for more sensitive analysis. The Lab's ICP Spectrometers all use CCD (Charge Coupled Device) technology, which allows the instrument to measure the whole spectrum necessary for the analysis of all the common metal bases.



ICP Spectrometer for elemental analysis

Happy Holidays

Best Wishes for an Enjoyable
Holiday Season and a New Year
Full of Happiness & Good Health!

LTI will be closed:
Thursday, December 25
Thursday & Friday, January 1 & 2

See Us at the Shows

March 22-26, 2009
NACE Corrosion - Atlanta, GA
April 21-22, 2009
Design 2-Part - Valley Forge, PA
June 9-11, 2009
MD&M East - New York, NY
June 28-July 1, 2009
PowderMet 2009 - Las Vegas, NV
October 6-8, 2009
South-Tec Expo - Charlotte, NC
November 15-18, 2009
Fabtech Int'l & AWS Welding
Chicago, IL

Showing Off the New Addition at Our Open House

Laboratory Testing Inc. held an Open House at our expanded facility on August 21, 2008. The event included tours of our production areas to observe testing, calibration and machining. After enjoying a buffet meal, many guests returned to these departments to speak with our technical staff.

Our expansion included a 12,000 sq. ft. addition and 65-space parking lot. Half of the addition was used to double the size of our Machine Shop. The remaining 6,000 sq. ft. became our new Calibration Lab, which was designed for optimum accuracy and efficiency. The latest technology for lighting optimization, environment control and vibration control were installed throughout the laboratory's various rooms.

Dimensional calibration of thread rings and hand tools takes place in a temperature and humidity controlled room. Length standards and other masters are calibrated in a separate "cold" room, which is continuously monitored to maintain an environment within the guidelines of 68 degrees \pm 1 degree and 30-50 percent relative humidity. Additionally, this cold room is lit with 120-150 ft. candles of indirect lighting



to prevent shadows and glare. The dimensional lab, cold room and pressure/torque/force room were each built on isolated foundations to minimize the effects of vibration from surrounding departments.

Introducing the Calibration Staff



Front: Madeline Komelasky (Technician), Cathy Dickson (Order Entry/Certifications), Jim Diccianni & Bill McGuerney (Technicians). Back: Terry Baker, Donna Shipe, Mike Hiller & Matt Heathwood (Technicians), Eva Pellow (Manager), Ed Phillips (Supervisor); Not Pictured: Cindi McGinnis (Subcontract Coordinator)

Engineer Joins LTI

Brad Bergman recently joined Laboratory Testing Inc. as our Metallurgical Lab Supervisor. He comes to LTI with nearly ten years experience as a metallurgist from Bodycote Materials Testing in Texas and Honda of America Manufacturing in Ohio. Brad is a graduate of Michigan Technological University with a degree in Metallurgical & Materials Engineering.



At LTI, Brad performs a wide-array of accredited metallurgical testing, which includes preparing test samples by mounting and polishing, and documenting test results. He also coordinates failure investigations and performs digital imaging with magnification from 7X to 1000X. Contact Brad at bbergman@labtesting.com.

Do You Have a Success Story?

Has LTI's "one-stop" lab had a positive impact on your business? Do you have a success story you'd like to share with us and with other

LabNews readers in a future issue? If so, contact Sharon Bentzley at sbentzley@labtesting.com or 800-219-9095, ext. 112.

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