

# Guidelines for best service and turnaround

## Purchase Orders - Destructive Testing/Specimen Machining

Your purchase order can be e-mailed or faxed to Sales/Customer Service in advance or enclosed with the materials or instruments sent to LTI for services. To ensure that orders are processed correctly and efficiently, we need all pertinent information before a job begins. Please include all of the following applicable details about the services requested on your PO.

**Type(s) of Testing and/or Machining Required:** (Refer to list of services on page 2)

- Mechanical Testing Type: \_\_\_\_\_ Quantity: \_\_\_\_\_
- Metallurgical Testing Type: \_\_\_\_\_ Quantity: \_\_\_\_\_
- Chemical Analysis Type: \_\_\_\_\_ Quantity: \_\_\_\_\_
- Corrosion Testing Type: \_\_\_\_\_ Quantity: \_\_\_\_\_
- Specimen Machining Type: \_\_\_\_\_ Quantity: \_\_\_\_\_

**Specification/Requirements:** \_\_\_\_\_

**Number of samples:** \_\_\_\_\_ **Number to be tested:** \_\_\_\_\_

**Material Description** (e.g. content): \_\_\_\_\_

\_\_\_\_\_ Plate \_\_\_\_\_ Tube/Pipe \_\_\_\_\_ Wire \_\_\_\_\_ Shape \_\_\_\_\_ Other

**Material Size** (e.g. thickness, diameter): \_\_\_\_\_

**Quote Number/Cost & Test Code from LTI Price List:** \_\_\_\_\_

**Part Drawing** (if applicable): \_\_\_\_\_

**Special Instructions** (if applicable): \_\_\_\_\_

**Return Samples:** \_\_\_\_ Yes \_\_\_\_ No **Return Extra Material** (if applicable): \_\_\_\_ Yes \_\_\_\_ No

**Shipping Method/Destination:** \_\_\_\_\_

**Turnaround: \***

- Standard
- Expedited Services: \*\* (Please call for availability)
  - \_\_\_ Same Day Rush
  - \_\_\_ Next Day Rush
  - \_\_\_ 2nd Day Rush
  - \_\_\_ 3rd Day Rush

\* Order will be completed by 5:00 p.m. on the due date

\*\* Material & Purchase Order must be received at LTI by 12:00 Noon to be considered as the first day of service

**Contact:** Name \_\_\_\_\_ Phone \_\_\_\_\_ E-mail \_\_\_\_\_

**Billing Information:** \_\_\_\_\_

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## Services

### DESTRUCTIVE TESTING

#### Chemical Analysis

- ♦ Atomic Emissions Spectroscopy (AES)
- ♦ Inductively-Coupled Plasma AES (ICP-AES)
- ♦ Inductively-Coupled Plasma Mass (ICP-MS)
- ♦ Accelerated Intergranular Corrosion
- ♦ Carbon/Sulfur/Nitrogen/Oxygen/Hydrogen
- ♦ Sieve Analysis
- ♦ Soxhlet Extraction
- ♦ Plating Identification
- ♦ Classical Wet Chemical Analysis
- ♦ Density, Porosity & Oil Content
- ♦ Positive Material Identification (PMI)
- ♦ Salt Spray {Salt Fog (ASTM B-117)}
- ♦ Passivation Testing
- ♦ Humidity Testing

#### Metallography

- ♦ Decarburization/Carburization
- ♦ Microhardness (Knoop & Vickers Indenters)
- ♦ Grain Size & Grain Flow
- ♦ Plating/Coating Thickness
- ♦ Corrosion Practice A (ASTM A-262)
- ♦ Eutectic Melting
- ♦ Macroetch (ASTM E-381)
- ♦ Micro Examination
- ♦ Case Depth
- ♦ Delta Ferrite (ASTM E-562)
- ♦ Surface Contamination & Condition
- ♦ Microstructural Features
- ♦ Surface Finish
- ♦ Alpha Case
- ♦ High Temperature Oxidation
- ♦ Accelerated Intergranular Attack
- ♦ Digital Imaging
- ♦ Metallurgical Mounting & Polishing
- ♦ Serial Sectioning
- ♦ Inclusion/Cleanliness Rating (ASTM E-45)
- ♦ Recast Layer Determinations

#### Mechanical Testing

- ♦ Bend
- ♦ Flattening
- ♦ Cone Strip
- ♦ Proof Load
- ♦ Yield Strength
- ♦ Stress Rupture
- ♦ Tensile/Ductility
- ♦ Flaring/Expansion
- ♦ Conductivity
- ♦ Magnetic Permeability
- ♦ Wedge & Axial Tensile
- ♦ Elevated Temperature Tensile
- ♦ Charpy V-Notch Impact
- ♦ Hydrogen Embrittlement/Stress Durability
- ♦ Hardness Test - Rockwell, Brinell & Superficial
- ♦ Welder & Procedure Qualifications  
(per ASME, ASTM, AWS & MIL Specs)

### MACHINING

#### Specimen Machining

- ♦ Test Specimens to ASTM & MIL specifications
  - Jominy
  - Tensile
  - Fatigue
  - Izod impact
  - Stress rupture
  - Stress corrosion
  - Compact tension
  - Fracture toughness
  - Round Compression
  - Charpy V-notch impact
  - Hydrogen embrittlement
  - Face, root, side bend ...
- ♦ EDM & Specialty Machining