

HH HANDY & HARMAN TUBE CO. CAMDEL METALS

LABORATORY TESTING CAPABILITIES

Handy & Harman Tube, Camdel Metals Inc. testing laboratory has the latest testing equipment and trained personnel needed to test production stainless steel tubing to assure compliance to rigorous military, ASTM and Medical specifications. The entire facility is ISO 9000:2000 certified, including the Quality Assurance Laboratory. This certification is your guarantee that all quality control procedures are in place and applies to the calibration of all of the test equipment.

Cold drawn tubing requires multiple cleaning, drawing and annealing steps to reach the desired physical properties and dimensions our customers expect. Numerous tests are performed to correlate test results within the process and finished material to specifications. Material Test Reports accompany each shipment and list the test results to stated specifications. You know your ordered material was tested at the point of manufacture with highly trained laboratory personnel to assure the material meets requirements. All material is traceable to the raw material specific heat number.

TENSILE YIELD AND ELONGATION



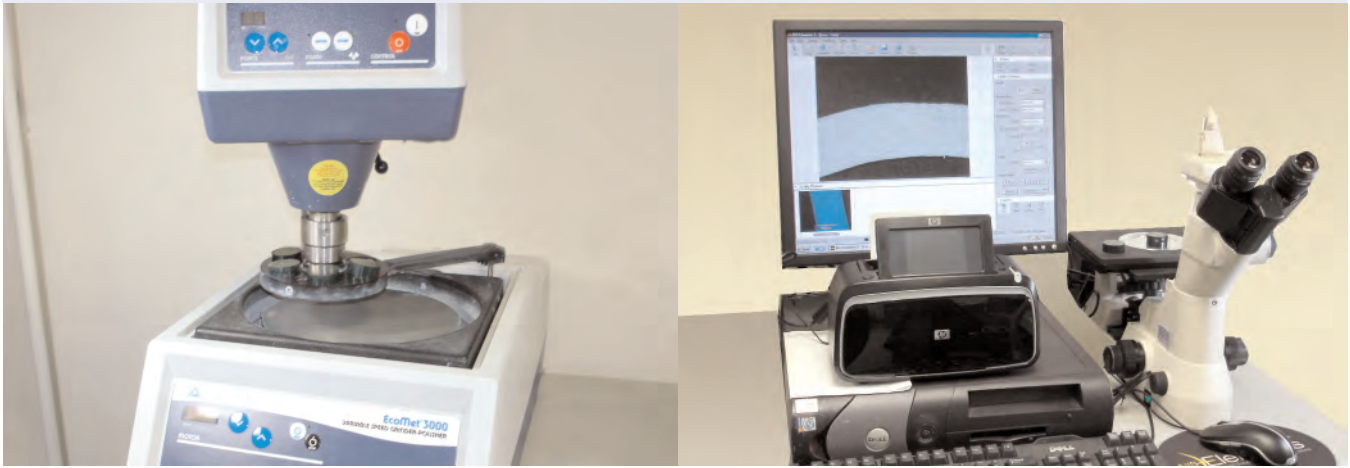
Tensile strength, yield and elongation, important physical characteristics, are measured using the latest test equipment indicating proper annealing processes during manufacture to customer specifications.

HARDNESS



Hardness of the stainless steel is determined with specified test equipment providing accurate analysis following exact test protocol. The latest testing equipment is utilized for hardness determination.

GRAIN ANALYSIS



Grain testing requires precise sample preparation. Before the latest computerized grain analyzer is used in evaluating grain size to 500 X magnification per ASTM E112, each sample is prepared using automated grinding & polishing equipment. The computer aided equipment assures each grain analysis for accuracy, repeatability and precision.

PRESSURE TESTING



Coil and straight length stainless steel tubes are hydraulic pressure tested at specified pressures assuring the integrity of the finished product. All water is removed followed by multiple drying techniques.

EDDY TESTING



Eddy current testing of each straight length tube provides assurances of surface quality and continuous wall thickness.

SURFACE MEASUREMENT



Specific surface roughness testing equipment also measures OD and ID (Ra) surfaces.

POSITIVE MATERIAL IDENTIFICATION



Positive Material Identification tests are performed with the latest analyzer available. The test equipment routinely assures proper alloy composition.

Flare testing, as specified in ASTM A 269, plus various aerospace and military specifications, is performed with exacting procedures using required equipment.

Additional quality assurance testing can be performed including chemical analysis, corrosion resistance and other specialized physical testing using our A2LA qualified partner laboratory.

TESTING

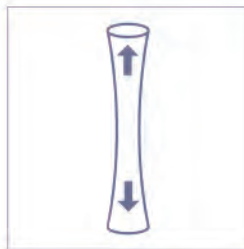
NON DESTRUCTIVE TESTS:

- Hydrostatic
- Eddy Current
- Surface Roughness
- Dimensional Analysis

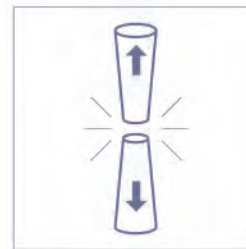
DESTRUCTIVE TESTS:

- Yield Strength
- Tensile Strength
- Elongation
- Positive Material Identification (PMI)
- Grain Size
- Rockwell Hardness

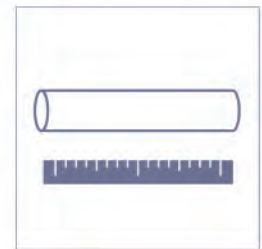
We also utilize many laboratories and testing facilities which allow us to offer ultrasonic and corrosion resistance tests.



Yield Strength



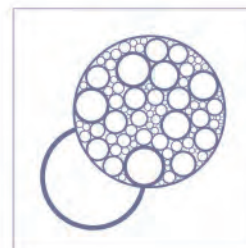
Tensile Strength



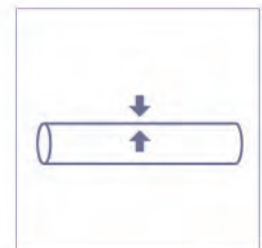
Elongation



Positive Material Identification (PMI)



Grain Size



Rockwell Hardness