

Ultrasonic Thickness Testing Course Outline (40hrs)

Basic Ultrasonic theory

Definitions of sound / ultrasound
Crystal types
Velocity
Wavelength
Acoustic Impedance
Couplants
Far field (Fraunhofer Zone) effects
Sensitivity

Piezo-electric effects
Modes of sound propagation
Frequency
Attenuation
Reflection / Transmission coefficients
Near field (Fresnel Zone) effects
Beam profiles
Resolution

Equipment

* An introduction to instrument operation and capabilities including "A: Scan, "B" Scan displays.

Selection of probes and probe characteristics.

Selection of couplant and couplant characteristics.

Computer interfacing and data logging.

***Instrument of Clients choice may be specified**

Practical Sessions

A thorough coverage of the calibration and operation of the above units will be covered during the practical sessions, these will include many hands on inspections of various materials and configurations.

The practical sessions will include instruction in:

Menus and navigation
1 Point calibration
Calibration to known velocity
Alarms – Hi – Lo
Deviation (plus or minus).

Measurement units and resolution
2 Point calibration
Painted surface calibration (Multi echo technique).
Minimum thickness storage (MINCAP)

Computer interfacing capability and Data logging functions –
Creating files / Storing data / Thickness values / Missed point / Deleting data

Some of the pitfalls of thickness testing will be explained and demonstrated during these sessions. If available, actual inspections of your products can be included in these sessions to familiarize your staff with their future inspections using your companies procedures.

End of course test

40-question examination to determine that sufficient knowledge has been acquired during the course

If there are any questions regarding this training package, please contact Richard Harrison on (714) 255-1500.