



Training Outlines:

Online Full UT Level I Testing Training

Our UT Level I training is based on ASNT and ISO Standards topical outlines. The training is divided in sections. Each section covers a specific subject, basic knowledge, 0-degree scanning, angled scanning. The training covers manual ultrasonic testing.

SECTION 1: BASIC PRINCIPLES OF ULTRASOUND AND ULTRASOUND TESTING

- NDT, certification
- History of UT, sound vs. Ultrasound
- Distance, velocity, cycle, material density, acoustic impedance, reflection & transmission
- Sine wave, frequency, wavelength, longitudinal waves, shear waves
- dB system
- The shell of an ultrasound instrument, types of probe, types of wedge
- A-Scan, signal amplitude, B-Scan, C-Scan
- Pulser/receiver, peak pulse, square pulse
- Couplant, time-of-flight calculation, wave propagation, attenuation
- Beam, sound field, near field, dead zone, sensitivity, resolution, penetration
- Through transmission, pulse echo, angle beam, immersion, PAUT, TOFD
- Structure and qualification of a procedure, training, acceptance criteria
- Calibration blocks, couplant
- Marking on part, probe positioning, scanning pattern
- Naming files, storing data
- Section's test

SECTION 2: 0-DEGREE ULTRASONIC TESTING

- Thickness measurements, lamination checks, corrosion mapping
- Analog and digital instruments, pulser/receiver, digitizer, filters, gain
- Contact probes, focused probes, dual-element probes
- Hard wedges, wheel probes, squirters, height calculation
- Full screen height, full screen width, cursors, gates
- Wave and beam, transit time, PRF, wedge signal
- Distance probe-part, probe angle
- Time base linearity, gain linearity, beam edge plot, near zone calculation, transfer correction
- Calibration, velocity, wedge delay, DAC, TCG, other
- Measuring, depth & amplitude, length & width, mapping flaws
- Interactive exercises, setup, calibration, scanning & evaluation
- Section's test

SECTION 3: ANGLED ULTRASONIC TESTING

- Weld inspection
- Angled wedge
- Legs
- Snell's law, incident vs. refracted, critical angles, refracted shear waves
- Beam angle, beam index point, shear and longitudinal waves
- Coverage
- Calibration, blocks, beam index point, refracted angle
- Calibration, velocity, wedge delay, sensitivity, DAC, TCG
- Skip distance, V-path
- Measuring, length, height
- Interactive exercises, setup, beam index point, beam angle, sensitivity, scanning & evaluation
- Section's test

SECTION 4: REVIEW

- Introduction
- Hardware
- Scans and views
- Basic theory
- Setup
- Calibration
- Inspection
- Data analysis
- Interactive exercises

SECTION 5: FINAL TEST

- 30-question final test