

UE Systems' Airborne/Structure Borne Level I Certification

Conforming to the classroom requirement of ASNT Recommended Practice, SNT-TC-1A and are in accordance with ISO 183436-8. The course offers 32 hours of instruction with a written examination. This is a comprehensive classroom course in which the theory, principles and practices of Airborne/Structure Borne Ultrasound Technology are taught. Instructors for this course have been selected for their outstanding comprehension, experience and technical expertise in the field of Airborne/Structure Borne Ultrasound. The course was designed by a committee of experts, some of whom were responsible for pioneering and developing the technology.

Laptop computers and bringing your own Ultraprobe is highly recommended, along with Steel Toed Safety Shoes and Ultraprobe that will be used.

Basic Outline of Some of the Topics of Basic Course, Level I and Schedule:

Day 1: Introduction and Basics:

- Certification requirements for Level I,
- Review of Proactive and Predictive Maintenance Concepts
- Typical Applications Overview,
- Theory Of Sound & Basic Physics of Ultrasound,
- Technology Integration,
- Equipment/Instrument/Software Overview,
- Generalized Methods of Recording and Reporting Inspection Results,
- Beginning of basic software integration.

Day 2: Leak Detection:

- Concepts of Leak Detection: Fluids Defined, Leak Rates, Acoustic Properties Leaks, Types of Leaks,
- Leak Detection Methods: Pressure, Vacuum, Ultrasonic Tone Test,
- Gross-to-Fine Method,
- Leak Confirmation Methods,
- Working in Noisy Environments, Shielding Techniques,
- Inspecting Heat Exchangers,
- Conducting a Compressed Air Leak Survey: determining CFM loss, computing energy savings, carbon footprint reduction, recording and reporting survey results,
- Software Download, Reporting.
- Hands in Field Work
- Quiz

Day 3: Electrical Inspection:

- Safety Considerations,
- Overview of Types of Electrical Equipment

- Definition of Electrical Discharges and Sound Recognition
- Diagnosing Electrical Discharges with Frequency Analysis and Time Wave Form
- Acoustic Effects Versus Heat Generated Defects,
- Integration of Ultrasound and Infrared Methods,
- Detection Methods for Electrical Equipment,
- Confirmation and Reporting Methods
- Hands on In Field Work
- Quiz

Valves and Steam Trap Contact Approach:

- Mechanical Inspection Overview,
- Valves,
- Compressor Inspection,
- Hydraulic Valves.
- Steam Trap Inspection: Steam Applications,
- Steam Trap types & Acoustic properties and Sound Recognition,
- Software Analysis,
- Inspection Techniques,
- Recording and Reporting
- Hands on In Field Work

Day 4: Mechanical Inspection:

- Strategies of Mechanical Inspection,
- Repeatability and Reliability,
- Bearing Inspection and Failure Modes of Bearings,
- Bearing Trouble Shooting Methods and Sound Recognition,
- High Speed versus Slow Speed,
- Bearing Comparison Methods,
- Bearing Trending Method with Decibel and Level of Failures
- Data Logging, Data Management,
- Sound Recording
- Basic Fault Frequency Analysis with UE Spectralyzer,
- Reporting
- Conditioned Based Lubrication with Ultrasound
- Over Lubrication/Under Lubrication
- Sound Recognition
- Gears, Pumps, and Cavitation,
- Hands on In Field
- Quiz

Overview of Software:

- Ultratrend DMS Overview:
- Creating Routes,
- Uploading, Downloading,

- Data Management and Setting Alarms
- Analysis and Reporting Tools
- UE Spectralyzer Overview:
- FFT Explained
- Time Wave Form Explained
- Cursor Control, Overlay Features,
- Tools and Parameters
- Reporting, Emailing, and Saving Reports

Day 5: (1/2 Day)

- Review of Airborne Ultrasound Technology,
- Final Examination (2 hrs. 100 Questions)

Who Should Attend This Course?

Any Inspector seeking to advance their knowledge in Airborne/Structure Borne Ultrasound Inspection should attend along with personnel who desire to demonstrate technical and inspection proficiency to their clients or employer. All skill levels are welcomed and encouraged to attend. Management is also encouraged to attend so that they may understand the capabilities of their inspectors and plan a program. Any inspector who wants to proceed to a Level II certification must first attend and qualify as a Level I certified inspector.

Requirements for Level I Certification:

In order to achieve an official certification, classroom training meeting the requirements of SNT-TC-1A must be completed along with successfully passing the General, Specific and Practical Quizzes, and Exam with a score of 80% or better.

Documentation of education or experience must be maintained annually. Hearing acuity must meet the minimum requirement of one ear of less than 25 dBHL (with or without aid.) Hearing acuity examinations must be documented annually. Documented experience signed by a supervisor or superior for 3 months or 210 hours.

ALPINE

COMPONENTS

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"Alpine Components" is the abbreviated trading name for "Alpine Components Limited"
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