

PREPARATORY COURSE FOR ISO 18436-2 CERTIFIED VIBRATION ANALYST CATEGORY-II & EXAMINATION



PROGRAMME OVERVIEW:

This Certification Training program is designed for those having experience in measuring and analyzing machine vibrations.

Since 38 hours of Class room training is a mandatory requirement for appearing in ISO Certified Vibration Analyst CAT-II Examination, we have also included the Basic Vibration Analysis Training in addition to ISO Certified Vibration Analyst CAT-II Training.

TRAINING DATE: 28th to 31st DECEMBER'2020

EXAMINATION DATE: 11th JANUARY'2021

Candidates willing to appear for ISO Certified CAT II examination are requested to send filled application form (CF009 attached) along with Examination Fees on or before 10th Dec '2020*. For others, undergoing training, the Last date for Fees is 23rd Dec'2020.

The Candidate appearing for ISO Certified Vibration Analyst CAT-II Certification Examination must have mandatorily undergone 38 hours of training and also satisfy any one of the following:

- Candidate must have 03 or more years of work experience in Vibration Analysis (Or)
- Candidate must hold any 4-year degree from a college or university, + 12 month of Experience (Or)
- Candidate must hold any 2-year Technical degree from a college or university, + 12 month of Experience

Certification:

Examinations for certification will be held at the end of the course. Certification exams are open to all qualified officials depending on the current level of experience / certification. Aspiring officials may contact us to register for a certification exam – Category II in accordance with the Vibration Institute (USA) requirements and ISO Standard 18436-2. However, certificate for 2 days or all 4 days shall be provided depending on course selected.

Course Benefits:

- Exposure to better Analyzing aptitudes
- Provision of a Deeper Understanding of Vibration Principles & Techniques
- Helping Analysts achieve the Standard Level of Knowledge and Expertise.

Who should attend?

Technical Superintendent / Chief Mechanic/Electrician, Maintenance Manager/Engineer/Staff who involve in direct maintenance, trouble shooting of rotating machinery and those who want to enhance their knowledge in best maintenance practices and continuous improvement.

* Since ISO Certified CAT II Examination is being conducted on behalf of Vibration Institute, USA, for candidates appearing for Examination, prior intimation is to be provided at least 03 weeks advance to Vibration Institute, USA. Hence, kindly send filled application form (CF009 attached) and Examination Fees on or before 10th Dec '2020.

M/s. Maintenance Analytics & Training Services
(INTERNATIONAL REPRESENTATIVE OF M/s. VIBRATION INSTITUTE, USA)

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PREPARATORY COURSE FOR ISO 18436-2 CERTIFIED VIBRATION ANALYST CATEGORY-II & EXAMINATION

Charges towards the Basic Vibration Analysis Training Program (02 Days)	: Rs. 9,000/-
Charges towards Preparatory ISO CAT-II Training (02 Days)	: Rs. 27,000/-
For Candidates Attending Both - Basic Vibration Analysis & Preparatory ISO CAT-II Training (04 Days)	: Rs. 32,000/-
Charges towards the CAT-II course Material (Basic Machinery Vibration – Class notes & Work Shop)	: Rs. 9,000/-
Fees towards ISO CAT-II Examination	: Rs. 36,000/-

Following topics will be covered

Basic Vibration Analysis (28th & 29th DECEMBER'2020)

Basics on Condition Based Maintenance

- Define Predictive maintenance
- Bath Tub Diagram
- Trending
- Various CBM techniques

Basics of Vibration

- Define – Displacement, Velocity, Acceleration, Frequency, Phase & Spectrum
- Measure and record data using vibration analyzer
- Understanding Frequency & Phase Analysis of Unbalance, Bent Shaft, Looseness, Area contact, Misalignment, Belt, Coupling, etc.
- Vibration due to coupling and shaft misalignment
- Factors that affect natural frequency

Overview of Vibration Transducer and How to Properly Select Them

- Types of Vibration Transducers and Their Optimum Applications - Accelerometers, Velocity Pickups, Noncontact Eddy Current Displacement Probes
- Shaft Contact Displacement Probes, Shaft Sticks, Shaft Riders
- Selection Criteria, Mounting of Transducer, & Mounting Application

Vibration Analysis

- Approach to Vibration Analysis.
- Understanding Frequency analysis of defective Bearings, Gearbox, Flow Turbulences, cavitation, Beat, resonance.
- Analyzing Electrical defects on Stator, Rotor, Rotor bars, Magnetic Centre, SCR, etc.

Balancing

- Single Plane Balancing
- Prevention and correction of unbalance
- Single plane vs. Two plane Balancing
- Spectral analysis for unbalance
- Preventing unbalance due to assembly errors.

ISO Standards classification of machinery

For ISO Certified CAT- II Preparatory Course - Topics Overview (30th & 31st DECEMBER'2020)

1. Basic Machinery Vibration

- The Physical Nature of Vibration
- Vibratory Motion
- Measures &
- Vibration & Phase Measurement
- Vibration Analysis
- Excitation
- Natural Frequencies, Mode Shapes and Critical Speeds

2. Data Acquisition

- Selecting a Measure
- Vibration Transducers
- Triggering Devices
- Transducer Selection
- Transducer Mounting
- Transducer Location
- Frequency Spans
- Data Display

3. Data Processing

- Oscilloscopes
- FFT Analyser
- Electronic Data Collector
- Data Sampling & Aliasing
- Windowing & Averaging
- Dynamic Range
- Setup of FFT Analyser and Data Collector

4. Fault Diagnosis

- Fault Diagnosis Techniques
- Operating speed Faults
- Rolling Element Bearings
- Gearboxes
- Centrifugal and Axial Machines
- Electric Motors
- Pumps
- Fans
- Compressors

5. Machine Condition Evaluation

- Shaft Vibration
- Bearing Vibration
- Casing Vibration

6. Machine Testing

- Test Plans
- Selection of Test Equipment
- Site Inspection
- Acceptance & Baseline test
- Resonance and Critical Speed Testing
- Fault, Condition, and Balance Tests
- Specifications
- Environment and Mounting
- Presentation of Data
- Reports

7. Periodic Monitoring

- Listing and Categorization
- Machinery Knowledge
- Route Selection and Definition
- Measures and Measurement Points
- Baseline Data
- Selection of Test Equipment
- Screening
- Trending
- Alarms
- Reports

8. Basic Balancing of Rotating Machinery

- Types of Unbalance
- Balancing Equipment
- Pre balancing Checks
- Measurements & Relationship between Mass Unbalance and Phase
- Trail Weight Selection
- Balancing Pitfalls
- Vector Method
- Weight Splitting & Consolidation
- Acceptable Vibration Levels

NOTE: MAINTENANCE ANALYTICS & TRAINING SERVICES, CHENNAI RESERVES THE RIGHT TO ACCEPT OR REJECT NOMINATION OF CANDIDATES.

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