MERCURY

Machinery Vibration Analysis Category #2

4 – 8 July 2027
Cairo (Egypt)



Dubai - UAE: +971 4 450 5697
Istanbul - Türkiye: +90 539 599 1206
Amman - Jordan: +962 79 712 3347

Machinery Vibration Analysis Category #2

Ref: 15644_318451 **Date:** 4 – 8 July 2027 **Location:** Cairo (Egypt) **Fees:** 4000 Euro

Introduction:

Understanding and effectively managing machinery vibrations is paramount in industrial machinery maintenance. The Machinery Vibration Analysis Category 2 training course delves into the advanced techniques for professionals to excel in this field. It focuses on enhancing technical knowledge in vibration analysis for predictive maintenance strategies.

Machinery Vibration Analysis Category II analysts have essential skills to conduct precise machine tests, accurately diagnose faults, and verify diagnoses through additional tests. They learn to establish vibration alarm thresholds crucial for early fault detection and gain expertise in effectively remedying specific types of machinery faults.

In this Machinery Vibration Analysis Category II course, participants will deepen their understanding of vibration analysis methodologies, honing their ability to identify potential equipment failures proactively. Professionals not only bolster operational efficiency but also elevate their role in ensuring the reliability and longevity of industrial machinery.

Participants will explore the intricacies of Machinery Vibration Analysis Category #2, equipping them with the skills to excel in predictive maintenance analysis and optimize machinery performance. Comprehending the effects of vibration in machines is an essential aspect of Category II vibration analysis.

The mechanical vibration analysis segment of the course will elucidate how vibrations can compromise machinery integrity and reliability. Participants will learn about various Machinery Vibration Analysis methods and how they can be utilized to detect anomalies before they lead to severe machinery damage or failure.

This Machinery Vibration Analysis Category 2 training course emphasizes the importance of attaining the Machinery Vibration Analysis Category II certification as a testament to one's expertise. Participants will focus on acquiring vibration analysis category II skills for those aspiring to excel in reliability and machinery maintenance.

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Targeted Groups:

- Maintenance Engineers.
- Reliability Engineers.
- Condition Monitoring Technicians.
- Mechanical Engineers.
- Predictive Maintenance Specialists.
- Operations Managers.
- Asset Managers.
- Plant Managers.
- Maintenance Supervisors.
- Service Technicians.
- Equipment Diagnosticians.

Course Objectives:

At the end of this Machinery Vibration Analysis Category 2 course, the participants will be able to:

- Learn correct methods for testing machinery to ensure accuracy.
- Develop skills to diagnose faults with precision in industrial equipment.
- Conduct additional diagnostic tests to verify initial findings effectively.
- Gain expertise in setting vibration alarm limits for early fault detection.
- Acquire knowledge and techniques to correct specific types of machinery faults effectively.
- Improve technical knowledge in the field of vibration analysis.
- Enhance proficiency in predictive maintenance analysis for optimized equipment performance.

Targeted Competencies:

By the end of this Machinery Vibration Analysis Category II training, participants competencies will:

- Technical Knowledge Enhancement.
- Advanced Vibration Analysis Techniques.
- Proficiency in Diagnostic Testing.
- Setting Vibration Alarm Thresholds.
- Fault Diagnosis and Correction Skills.
- Predictive Maintenance Strategies.

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Course Content:

Unit 1: Fundamentals of Machinery Testing:

- Importance of correct machine testing techniques.
- Types of tests: baseline, operational deflection shape ODS, resonance, etc.
- Understanding measurement parameters: amplitude, frequency, phase.
- Equipment needed for comprehensive testing.
- Hands-on practice in conducting accurate tests.

Unit 2: Fault Diagnosis Techniques:

- Strategies for accurate fault diagnosis in machinery.
- Common types of faults: imbalance, misalignment, bearing defects, etc.
- Interpretation of vibration spectra and waveforms.
- Case studies illustrating fault diagnosis processes.
- Practical exercises on identifying and categorizing faults.

Unit 3: Verification through Additional Diagnostic Tests:

- Role of additional tests in confirming initial diagnoses.
- Use of complementary techniques: oil analysis, thermography, ultrasound.
- Integration of multiple diagnostic methods for comprehensive assessments.
- Practical sessions on conducting verification tests.
- Analysis of real-world scenarios to validate diagnostic outcomes.

Unit 4: Setting Vibration Alarm Limits:

- Importance of vibration alarms in predictive maintenance.
- Factors influencing alarm threshold setting: machine type, criticality, operating conditions.
- Calculation methods for alarm limits: RMS, peak, crest factor.
- Adjustment of alarm thresholds based on equipment condition.
- Simulation exercises to determine optimal alarm limits.

Unit 5: Fault Correction Strategies:

- Techniques for correcting common machinery faults.
- Corrective actions for imbalance, misalignment, resonance issues, etc.
- Implementation of precision alignment and balancing procedures.
- Use of software tools for fault correction verification.
- Practical workshops on applying corrective measures effectively.