



المركز العالمي للتدريب والتطوير
International Centre For Training & Development



Earth Resistivity Tests



International Association
for Health and Occupational Safety
and the Environment



Course Introduction:

This course provides a thorough understanding of earth resistivity testing, essential for assessing soil properties and ensuring effective grounding systems. Participants will learn about the principles of resistivity, testing methods, equipment used, and interpretation of results.

Course Objectives:

Upon the successful completion of this course, each participant will be able to:-

- Understand the concepts of electrical resistivity and its relevance to grounding.
- Learn the various methods of conducting earth resistivity tests.
- Familiarize with the equipment and tools used in testing.
- Analyze and interpret resistivity data for practical applications.
- Comprehend the industry standards and safety protocols related to earth resistivity testing.

Who Should Attend?

- Electrical engineers and technicians
- Grounding system designers
- Safety and compliance officers
- Environmental engineers and geologists

Course Outline:

Day 1: Introduction to Earth Resistivity

- **Session 1: Basic Concepts of Electrical Resistivity**
 - Definition of resistivity and its significance in grounding
 - Factors affecting soil resistivity (moisture, temperature, composition)
- **Session 2: Importance of Earth Resistivity Testing**
 - Applications in electrical grounding and lightning protection
 - Role in environmental assessments and site evaluations

Day 2: Testing Methods

- **Session 1: Overview of Resistivity Testing Methods**
 - Four-point probe method
 - Wenner and Schlumberger configurations
- **Session 2: Choosing the Right Method**
 - Criteria for selecting testing methods based on site conditions and objectives

Day 3: Equipment and Setup

- **Session 1: Overview of Testing Equipment**
 - Resistivity meters and their functions
 - Electrodes: types, materials, and setup
- **Session 2: Preparing for Testing**
 - Site preparation and safety considerations
 - Calibration and maintenance of equipment

Day 4: Conducting Earth Resistivity Tests

- **Session 1: Step-by-Step Testing Procedures**
 - Field setup and electrode placement
 - Performing the test: data collection and techniques
- **Session 2: Common Challenges and Troubleshooting**
 - Addressing environmental factors and equipment issues
 - Ensuring accurate and reliable results

Day 5: Data Interpretation and Applications

- **Session 1: Analyzing Resistivity Data**
 - Understanding resistivity profiles and their implications
 - Software tools for data analysis and visualization
- **Session 2: Standards and Compliance**
 - Overview of relevant standards (IEEE, IEC)
 - Importance of compliance in grounding design and installation

Conclusion

- Recap of key concepts and practices covered in the course
- Discussion on the significance of earth resistivity testing in electrical systems
- Q&A session to address specific participant queries

Course Methodology:

A variety of methodologies will be used during the course that includes:

- (30%) Based on Case Studies
- (30%) Techniques
- (30%) Role Play

- (10%) Concepts
- Pre-test and Post-test
- Variety of Learning Methods
- Lectures
- Case Studies and Self Questionnaires
- Group Work
- Discussion
- Presentation

Course Certificate:

International Center for Training & Development (ICTD) will award an internationally recognized certificate(s) for each delegate on completion of training.

Course Fees:

To be advised as per course locations. This rate includes participant's manual, Hand-Outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Course Timings:

Daily Course Timings:

08:00 - 08:20	Morning Coffee / Tea
08:20 - 10:00	First Session
10:00 - 10:20	Coffee / Tea / Snacks
10:20 - 12:20	Second Session
12:20 - 13:30	Lunch Break & Prayer Break
13:30 - 15:00	Last Session