

Dielectric Principles features five individual segments covering the basic dielectric principles in AC and DC testing. The segments include: Introduction to Dielectric, What is Insulated, Category A, B, and C, Dielectric Testing Procedures, and Dielectric Testing.

1. Introduction to Dielectric

- a. The introductory lesson provides information on the basic principles of dielectric testing including:
 - i. Description of a dielectric test
 - ii. Standards that Aerial Devices and Digger Derricks are tested to
 - iii. Function of an insulated boom
 - iv. Who is qualified to perform a dielectric test
 - v. Reasons to perform a Qualification or Maintenance dielectric test
 - vi. Definition of Insulation

2. What is Insulated – Aerials and Diggers

- a. The second lesson focuses on what is insulated and what is not insulated on both Aerial Devices and Digger Derricks. Areas covered include:
 - i. What is Insulated – Aerials
 1. Upper Boom Insulation
 2. Lower Boom Insulation
 3. Platform Liner
 4. Hot Line Tools
 - ii. What is NOT Insulated – Aerials
 1. Boom Tip
 2. Top Control Handles
 3. Other Areas
 4. Untested Booms
 - iii. What is Insulated – Digger Derrick

3. Category A, B, and C

- a. The Category A, B, and C lesson introduces the three categories of units and the differences between them. This lesson also covers a variety of components including corona rings, the test electrode system, conductive shields, and vacuum prevention systems. Areas included in this training segment include:
 - i. Reasons to Perform Dielectric Tests
 - ii. Failed Dielectric Tests
 - iii. Category Classifications
 1. Line Voltage
 2. Design Voltage

3. Qualification Voltage
 - iv. Category C
 - v. Category B
 - vi. Category A
 - vii. Test Electrode System
 - viii. Corona Rings
 - ix. Conductive Shields
 - x. Telescopic Insulated Fiberglass Booms
 - xi. Coaxial Cable
 - xii. Vacuum Flashover
 - xiii. Vacuum Prevention Systems

4. Dielectric Testing Procedures

- a. The fourth segment of this training, Dielectric Testing Procedures, focuses on the forms used by Terex Utilities to perform various dielectric tests. Topics include:
 - i. Visual Inspections
 - ii. Additional Category A and B physical checks
 - iii. Installing Jumpers
 - iv. Unit Prefixes
 - v. Qualification Dielectric Test
 - vi. Category A Certification
 - vii. Category A and B Maintenance
 - viii. Category C and Digger Derrick Maintenance
 - ix. Hotstick Testing
 - x. Upper Controls

5. Dielectric Testing

- a. The final segment of this series focuses on the general requirements for performing a dielectric test. Topics in this section include:
 - i. Setting up a dielectric test
 - ii. Dielectric Test Configurations
 1. Category C Aerial Devices
 2. Extensible Insulating Aerial Devices
 3. Category A and B Aerial Devices
 4. Chassis Insulating Systems
 5. Platform Liner Dielectric Test
 6. Testing Results
 7. Upper Control Handles

Quizzing and Testing

Entrance Exam

The entrance exam is provided to help you gauge your knowledge on the topics that will be covered in this training. It also provides the instructors with valuable feedback, allowing us to modify and expand the training to ensure it is as effective as possible. The entrance exam can be taken only once and should be completed before starting any of the training lessons. This exam has no effect on the final grade for the course.

Review Quizzes

A review quiz is provided after each lesson segment to allow the technician to gauge their knowledge and understanding of the topic. The review quizzes can be taken as many times as desired and have no effect on the final grade for the course.

Dielectric Principles Final Exam

The final exam consists of 50 multiple choice and true/false questions. To successfully pass this course, the technician must achieve a score of 90% or higher on the final exam in a maximum of 3 attempts. Upon the successful completion of this course, the technician will receive a Certificate of Completion for the course.