



## CQE Training & Consultancy Plt (Reg No. : LLP 0003668 LGN)

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# ELECTROSTATIC DISCHARGE PROGRAMME (ESDP)

**ESD: See it! Believe it! Control it!**

SBL  
Scheme



## Introduction

In ordinary circumstances, static electricity and ESD are little more than an annoyance. However, in an increasingly technological age, the familiar static shock we receive when walking across a carpet can be costly or dangerous. This same static discharge can ignite flammable mixtures and damage electronic components. Static electricity can attract contaminants in clean environments or cause products to stick together. The cost of [ESD-damaged electronic devices](#) alone ranges from only a few cents for a simple diode to several hundred dollars for complex hybrids. Loss of production time in web processing industries due to static attraction is significant. When associated costs of repair and rework, shipping, labor, and overhead are included, clearly the opportunities exist for significant improvements in reducing losses to ESD and static electricity.

## Learning Outcomes/Objective

Also available as  
in-house programme.

After attending the course, participants should be able to :-

- ✓ Acquire a comprehensive understanding of the principles and functions of electrostatic discharge (ESD) practices in manufacturing industry ;
- ✓ Adequate awareness, understand threats and necessary precaution actions in preventing ESD damages.
- ✓ Develop a good ESD control and audit system in manufacturing plant to reduce internal and external quality costs.



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# Contents

## 1. Describe and understand:-

- Understand ESD and the importance of ESD prevention.
- Describe static electricity.
- Describe electrostatic discharge.
- Describe how electrostatic discharge occurs.
- Identify proper ESD procedures.
- Identify the causes of ESD.
- Identify insulators and conductors at your workstation.
- Define static materials.
- Identify how much static can damage a component.
- Describe catastrophic and latent failure.
- Discuss the costs of ESD damage.
- Use proper ESD protective procedures in your work day.
- Identify precautions that should be taken in non-protected ESD areas.
- Understand the importance of grounding.
- Describe resistive and common point ground.
- Describe how to properly use and wear a wrist strap.
- State how often you should test a wrist strap.
- Describe how to test a wrist strap.
- Identify proper ESD protective packaging.
- State proper procedures for transporting electronic components.
- Properly enter ESD protected areas.
- Recognize ESD protected areas.
- Describe ESD protective measures in ESD protected areas.
- Identify ESD garments and describe how to properly wear them.
- Describe ESD control measures used in these areas.
- Describe how to use toe, shoe or heel grounders.
- Describe how to test heel grounders.
- State that an ESD protected area is controlled.
- Use proper ESD control techniques in the field.
- Use proper ESD control techniques when handling sensitive components.
- Remove static generating items from you work area.
- Describe the proper use of a dissipative mat.
- Describe how to ground yourself if an ESD field kit is not available.
- State how grounding is achieved.
- State the use of a disposable wrist strap.

2. Explain the • Human Body Model (HMB) of ESD damage

3. Identify correct • procedures for controlling ESD caused by the HBM

4. Explain the • Charged Device Model (CDM) of ESD damage

5. Identify correct procedures for controlling ESD caused by the Charged Device Model

6. Describe safe • and unsafe practice in handling assemblies

**Annex : ANSI/ESD S20.20 Standard**



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## Who Should Attend

**P**roduction and Operation Managers, Executives, Supervisors, ESD Committee members, ESD and Quality auditors and who are involved in the day-to-day operations of a manufacturing plant.

## Duration

2 days

## Training Methodology

**T**he program would be conducted by using the following materials / aids :-

- ✓ Course Note & Lecturettes
- ✓ OHP / LCD Presentation
- ✓ Short Video Clip
- ✓ Group Discussion

