



Kuala Lumpur
6 & 7 Oct 2015



ELECTRICAL SAFETY AND EARTHING SYSTEM

In collaboration with:



SBL CLAIMABLE

Registered with:

PSMB
APPROVED TRAINING
PROVIDER
CLASS A
(Serial No: 1631)

MINISTRY OF FINANCE
(MOF No: 357-02054304)

CELEBRATING
10
Years
OF
CULTIVATING YOUR
EMPLOYEES' POTENTIAL



ELECTRICAL SAFETY AND EARTHING SYSTEM



INTRODUCTION

The purpose of this training is to help reduce the risk of death or injury to employees who work on or around electricity, and to prevent fire and damage to plant and equipment from excessive heat buildup caused by improperly grounded electrical systems.

Knowledge of proper grounding can also help answer power quality issues you may be experiencing in your plant.

This training is designed to improve power quality, save lives and prevent damage to plants, buildings and equipment! Who should take this course?

This training is designed for anyone responsible for the safe installation, maintenance, repair or inspection of electrical equipment, building electrical systems and general electrical wiring.

OBJECTIVES

Upon completion of this 2-day course, the participants will understand:

- Basic electrical theory related to Electrical safety
- The effects of current passing through human body and how to prevent electrocution
- Statutory regulations
- Types of earthing / grounding
- The various components of grounding and bonding systems
- Electrical shock hazards and the effect of electricity on the human body
- The various components of grounding and bonding system
- Connections of grounding and bonding equipment
- Earth protective relays

WHO SHOULD ATTEND?

- Plant Electricians
- Construction Electricians
- Building Electricians
- Building Engineers
- Plant Engineers
- Design Engineers
- Electrical Engineers
- Installation Technicians
- Maintenance Technicians
- Inspectors
- Environmental Health & Safety Personnel

ELECTRICAL SAFETY AND EARTHING SYSTEM



PROFILE

P. Kumaran

P. Kumaran graduated from the University of Northumbria in Newcastle with a Degree in Mechanical Engineering, and Electrical Engineering. He has a Professional Certificate in Energy Management & Society of Engineers Part 1 & 2 (Electrical Eng).

P. Kumaran has 25 years of experience in various positions as a supervisor & training officer at Motorola, electronic engineer in Philips Semiconductor, unit section manager at Giant Hypermarket in southern region & Lecturer at Institute Technology Negeri.

As a training officer, he conducted in house technical courses at Motorola, Electrical Safety courses - Energy Management on Compressors for Rohm Electronic Kelantan & short courses at Philips Semiconductor.

His focus is on Energy related subjects. He analyzes and provides solutions to optimize electricity usage to factories, hotels, apartments, power stations and etc.

COURSE OUTLINE

DAY 1

Module 1:

Basic Electrical theory related to Safety

- 1.1 Current , Voltage and Resistance
- 1.2 Effects of current flow in a conductor
- 1.3 The effects of current flow in Human Body
- 1.4 What is Insulation Resistance and it's importants
- 1.5 Basic understanding of static Electricity

Module 2:

Statutory Regulations

- 2.1 Why needed and some examples

Module 3:

Earthing System

- 3.1 Purpose and Functions
- 3.2 Types of Earths
- 3.3 Types of Earthing Materials and Conductors
- 3.4 Soil Electrical Resistivity
- 3.5 Current Flow in Ground
- 3.6 Earth Potential Profiles
- 3.7 Measurement of Earth Resistivity
- 3.8 Measurement of Earth Resistance
- 3.9 The Use of Chemical Additives for improving Earth

Workshop Schedule

- 8.30am Registration and breakfast
- 9.00am Workshop begins
- 10.30am Coffee break and networking
- 10.45am Workshop resumes
- 12.30pm Luncheon and networking
- 1.30pm Workshop resumes
- 3.15pm Coffee break and networking
- 3.30pm Workshop resumes
- 5.00pm End

DAY 2

Module 4:

Lightning Earth

- 4.1 Characteristics of Lightning Currents and Effects of Lightning Currents in Soil
- 4.2 Lightning Current Behaviour in Soil
- 4.3 IEC 60071 Lightning Surge Resistance
- 4.4 The Need for Equipotentialization of Ground of Tall Masts and Buildings
- 4.5 Embedding Down Conductors in Concrete Columns

Module 5:

Earthing for Electromagnetic Compatibility

- 5.1 High Frequency Interference
- 5.2 Equipotentialization
- 5.3 Shielding or Screening
- 5.4 Surge Protection
- 5.5 Filtering

Module 6:

Method of protection against Electrical Shock

- 6.1 Insulation of live parts
- 6.2 Using Extra Low Voltage
- 6.3 Placing Barriers and Obstacles
- 6.4 Using Protective Relays Such as Circuit Breakers . Earth Relays , Fuses etc.

• PARTICIPANTS INFORMATION

WORKSHOP FEE

RM3,595/PAX**Inclusive of 6% GST**

For group registration, please contact us for group discounts.

MODE OF PAYMENT

Cheque or bank draft in favour of:

COMFORI SDN.BHD. (581115-T)

E-02-03, East Wing,
Subang Square Business Centre,
Jalan SS15/4G, 47500 Subang Jaya,
Selangor, Malaysia

Payment Via:

- ☐ Cheque by post/courier
☐ Tele-Transfer
☐ Deposit into Our Account

VENUE

Kuala Lumpur

For hotel reservations, please book directly with the hotel. Hotel reservations and travel arrangements are the responsibility of the registrant. Hotel bills are to be settled by participants directly with the hotel. Note that the rooms are available at a first come, first serve basis. Comfori will not be responsible for hotel reservations. For special room rates, please quote Comfori's event:

**Electrical Safety and
Earthing System**
6 & 7 Oct 2015

CONTACT DETAILS

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TERMS & CONDITIONS

- Course fees include course materials and refreshments unless otherwise stated.
- Payment Terms.** Once a completed registration form is received by Comfori, an invoice will be issued. Payment must be made within seven (7) days from the date the invoice is issued. Full payment must be received prior to the event date. Comfori reserves the right to deny admittance to an event if full payment has not been made. Companies that intend to make payments after the event are required to submit a Letter of Undertaking as payment guarantee. Certificate of attendance to the event will be awarded only after payment is received.
- Cancellations and Substitutions.** All cancellations must be made in writing at least 14 days prior to the event date. No refunds will be available following a cancellation. However, if full payment had been made, the payment will be credited towards rescheduled dates or to a future Comfori event. A credit note or a free seat voucher of equivalent value that could be used at future Comfori events will be issued. Comfori reserves the right to charge all hotel booking fees to the client as the result of a cancellation. Substitutions are always welcome at no extra charges. Substitution of participants must be made at least one (1) working day before the event date.
- Note.** Comfori reserves the right to cancel, postpone, or alter the advertised programmes at any time. Comfori will not be held liable for any costs or liabilities incurred by clients as a result of the change of date/programme/venue. Should a cancellation of an event by Comfori occur, the event will be fully refundable.
- Money Back Guarantee.** The decision on refund amounts is subjected to the sole discretion of Comfori's management.
- Copyright.** Distribution, republication and duplication of all contents and materials provided and distributed by Comfori are strictly prohibited.
- Incorrect Mailing Information.** Should mailing information or company details be incorrect or inaccurate, please contact us immediately.
- Disclaimer.** Upon submission of this registration form, client acknowledges that he/she has read and accepted all the terms and conditions as listed above.
- GST.** Price quoted inclusive of 6% GST. (COMFORI's GST No : 001239465984).

Name

Email

H/P No.

Designation

Office (Direct Line)

Department

Vegetarian ☐ Yes ☐ No

1

Name

Email

H/P No.

Designation

Office (Direct Line)

Department

Vegetarian ☐ Yes ☐ No

2

Name

Email

H/P No.

Designation

Office (Direct Line)

Department

Vegetarian ☐ Yes ☐ No

3

Name

Email

H/P No.

Designation

Office (Direct Line)

Department

Vegetarian ☐ Yes ☐ No

4

• COMPANY INFORMATION

Company

Address

HR Name

HR Contact

Email

Tel

Fax

Signature / Company Stamp