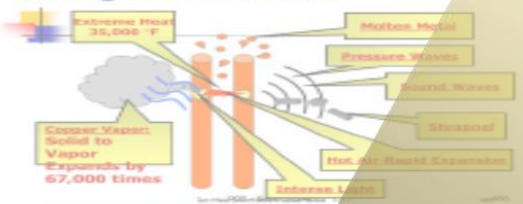


Technical Application of SANS 10142 - 1 EDITION 3.2 WIRING CODE

Arcing Short Circuit



Effective
Human
Intervention
LEADERS IN TRAINING

SANS10142-1 All new addition of the Code for the Wiring of Premises and the OHSACT 85/1993 and Related Regulations

SANS 10142 Part 1 Ed 3.2 including the responsibilities required by all concerned terms of the Occupational Health and Safety Act 85 of 1993 and the general requirements of the Certificate of Compliance for any Electrical Installation up to 1000 Volts.

DELEGATES ARE ENCOURAGED TO BRING THEIR OWN SANS CODES, CERTIFICATES OF COMPLIANCE AND CALCULATORS



Recognised for Continuing Professional Development (CPD) by SAAMA in accordance with ECSA guidelines



Accreditation No: 17-QA/ACC/0603/11

SANS10142-1 (EDITION 3.1+2) FOR WIRING OF PREMISES AND THE OHSACT 85/1993 AND RELATED REGULATIONS

COURSE SYNOPSIS

Some individuals and Companies still hold the outdated perception that they might or should be exempted from compliance with the SANS 10142-1 code for the wiring of premises.

SANS 10142-1 is incorporated into law through reference in the Electrical Installation Regulations of the OHSACT. This act states that “no person shall connect or permit the connection of any completed or partially completed electrical installation to the electricity supply unless it has been inspected and tested by a registered person and a certificate of compliance for that electrical installation has been issued. This workshop would look at the fundamental and installation requirements under the code and how to get to the stage where an electrical installation can be inspected and tested and a COC issued. It will include solar systems from the solar code and medical locations including Certificates of Compliance.

ABOUT YOUR FACILITATOR

Ian Mee (CEM, Pr. Tech.Eng. Pr.Cert.Eng. SM-ICMEE-SA, M SAIEE, M-IPET MIE 00009)

Ian Mee is registered as a Professional Technologist, Professional Certificated Electrical and Mechanical Engineer and registered as a Master Installation Electrician. He has 50 years of Industrial experience in Electrical, Mechanical and Process Engineering which included chemical, rubber, paper, sugar, shipping and food industries. With over 20 years in the chemical and allied Industrial environment at senior management levels. The last 20 years running a consulting practice. Ian Mee is a registered Assessor for EWSETA and was a SANAS accredited Authorised inspection Body and is recognised by Department of Labour as an AIA (CI 014)

UNDERSTAND THE IMPLICATION OF THESE CODES AS APPLIED TO THE ELECTRICAL ENVIRONMENT INCLUDING:

- The connections to electrically powered machinery
- The design, construction, and repair of electrical installations
- The inspection and handling of disputes regarding electrical installations, the AIA concepts
- The registered person, contractors, and other electrical practitioners
- The supervision of electrical installations
- The certificate of compliance and test reports
- Solar systems
- Medical locations
- Alternate supplies
- Earthing arrangements

WHO SHOULD ATTEND?

The workshop is ideal for Engineering Professionals who have interest in electricity safety.

- ✓ Plant Engineers and Managers
- ✓ Electrical Engineers and Technicians
- ✓ All electrical practitioners, electricians, millwrights, contractors
- ✓ Engineering Managers
- ✓ Maintenance Engineers
- ✓ Instrumentation Engineers
- ✓ OHS Managers
- ✓ Workplace Safety Professionals
- ✓ Consultants
- ✓ Technicians and Supervisors
- ✓ Foreman, Superintendents and Artisans
- ✓ Electrical Contractors
- ✓ Solar Installers

BENEFITS INCLUDE:

- Participation in an interactive workshop
- Learn from recognised expert with cross industry experience
- Comprehensive course documentation
- Certificate of Completion
- 2 CPD Credits



REGISTRATION will commence at 08:00 on the first day with the workshop beginning at 08:30 each day. Refreshments will be provided at appropriate intervals, and lunch will be served at 12:30. The workshop will conclude at 16:30 each day.

**All timings are approximate due to the nature of the workshop.*

Continuing Professional Development (CPD) refers to continuing education and training. **CPD** also refers to the systematic maintenance, improvement and broadening of knowledge and skills and the development of the necessary personal qualities for the execution of professional duties throughout a person's career. It is the learning and development that takes place after completion of educational studies, and by which registered persons maintain and develop competencies to continue to perform their roles efficiently through further training and experiences. **ECSA is recognised by SAQA as a Professional Body ID: 623. CPD registered courses can be submitted on your WSP.** EHI's courses are accredited through **SAAMA** for approval of CPD activities which will automatically be accepted by **ECSA**.

SANS10142-1 (EDITION 3.1+2) FOR WIRING OF PREMISES AND THE OHSACT 85/1993 AND RELATED REGULATIONS

DAY 1

Session 1

Introduction

- Occupational Health and Safety Act – Background to the working environment
- The general during of employers and employees
- The content and use of company regulations
- How the regulations apply when work must be carried out on apparatus
- Responsibilities and duties of authorised persons
- Abnormal conditions
 - Safety of personnel
 - Safety of equipment
 - Safety of plant
- Electrical safety – how do we achieve it?
 - Electrical switchgear safe operating
- Electrical installations include many components such as switchgear and control gear and cables
- These items are regulated by the OHSACT, various Codes of Practice, Company Operating Policies and Safe Working Procedures.

Session 2

Electrical Installation Regulations

(EIR Regulations)1-14

Including the Department of Labour Guidelines on EIR

1. Some definitions
2. Responsibility
3. Authorized inspection authority
4. Design and Construction (Section 5)
5. Contractor
6. Certificate of compliance and new test reports
7. Registered electrician

Background to Electrical Concepts

- General electrical terms used in the industrial environment
- Electrical circuits including series and parallel
- Electrical protection components selection and applications
- Electrical components found in any electrical installation
- Specific earthing requirements
- Introduction to the associated codes

Introduction to SANS 10142-1

Specific electrical requirements:

- What is covered by this code
- Statutory requirements
- Safety, Basic provisions, Characteristics of the supply,
- Installations and component selection
- Special installations
- Introduction to safety earthing concepts
- Earthing requirements
- Specific tests required for compliance

Session 3

SANS 10142 - 1 – Edition 3 Wiring of Premises

Introduction to the wiring code and its application between point of control and point of consumption

Specific Application of the code for the following installations concepts:

- Definitions, component compliance and safety requirements
- Requirements for the general installation wiring and selection of components, including all the tables for cables (for calculations)
- Special installations including swimming pools, and medical locations
- Inspection and testing including the function of various instruments required.
- Annexure –The general concepts outlined in the annexures.
- A general guideline included for assistance in volt drop and fault calculation

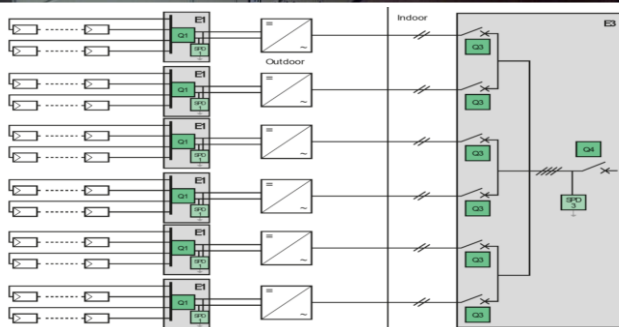
Group activity in doing hand calculation of cable selection, volt drop and fault handling, including the application of a simple computer programme that will be given to the delegates.



SANS10142-1 (EDITION 3.1+2) FOR WIRING OF PREMISES AND THE OHSACT 85/1993 AND RELATED REGULATIONS

DAY 2

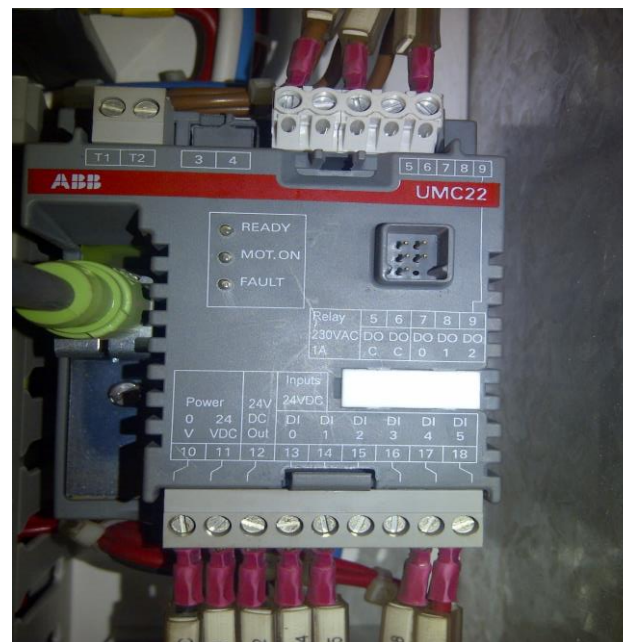
- Technical application
- Fundamentals
- Selection
- Cables
- Earthing
- Electrical concepts
- Alternative supplies
- Solar
- Generator
- UPS



- Testing and Test Report
- Technical application
- Installation characteristics



- Source identification.
- Transformer
- Cable selection
- Fault calculations
- Load assessments.
- Earth conductors
- Testing
- Test Report
- Information and other information



SANS10142-1 (EDITION 3.1+2) FOR WIRING OF PREMISES AND THE OHSACT 85/1993 AND RELATED REGULATIONS

DAY 3

Session 4

The certificate of compliance, changes, and applications.

- Details of the certificate of Compliance and test reports
- Certificate layout
- Unique number
- Test report (What is it?)
- Additional requirements
- Interpretation of the Certificate of Compliance

Additional certificates required for:

- Residential
- Industrial
- Hazardous areas
- Solar
- Other

Information

- Calculations
- Pit falls
- Instruments
- Measurements

Major components in an installation

- Supply conditions
- Transformer
- Meter kiosk
- Cable
- Consumer

Residential / industrial / commercial / state owned.

- Consumer cable
- Point of supply
- Point of control
- Point of consumption
- Point of outlet



Some problem areas:

- Fixed appliances
- Arms reach
- Mixed circuits and loading
- Ceiling fans and control systems
- Alternative supplies (generators, UPS, solar)
- PSSC
- Loop impedance measurement and interpreting results
- Bonding conductor and measurements
- Earth continuity conductor measurements

Session 5

Changes from Edition 3.1+2

Sections from the code

- Introduction
- Normative references
- Definitions
- Compliance
- Fundamentals
- Installation
- Special installations
- Alternative supplies
- Test and measurement
- Certificates of compliance
- General concepts from the annexures

Session 6

General discussion on all the codes required for an electrical installation

Industrial, commercial, medical, Solar and alternative supplies

Industrial earthing systems

Solar earthing systems

