

# SAQCC FIRE

## D&GS TRAINING SUB COMMITTEE

### COURSE CURRICULUM

<b>COURSE</b>	<b>Fire Detection Standards Training 10139</b>	
<b>ORIGINATOR</b>	<b>K Norgate</b>	
<b>DATE</b>	2nd November 2012	
<b>Amendment 1</b>	October 5th 2013	1st Committee review
<b>Amendment 2</b>	November 21st 2013	Amended
<b>Issued</b>	November 30th 2013	Issued

EQUIVALENT TRAINING COURSES AVAILABLE		
TITLE	TRAINING SCHOOL	CONTACT DETAILS
SANS 10139	Fire Systems Training	011 452 1797

<b>STATUS OF CURRICULUM</b> - Issued
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<b>EQUIVALENT UNIT STANDARD</b>
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None

#### **PURPOSE OF TRAINING COURSE**

This training course is for learners requiring to get an understanding of the fire detection Code of Practice used within South Africa.

Learners who have completed this course will have a thorough working knowledge of the design, installation, commissioning and servicing requirements for fire detection systems as per the South African National standard.

#### **LEARNING ASSUMED TO BE IN PLACE**

This course assumes the learner is already proved competent in:

- Workshop practice
- Cables and Cabling
- Basic fire theory
- Supplier Training
- Installation and Commissioning practices

## **OUTCOMES REQUIRED**

### **Topics Covered:**

1. The full content of the National standard for fire detection in buildings SANS 10139.

### **Outcome 1: To understand the history, scope, limitations and variations of SANS 10139.**

#### **Learning Outcomes:**

To include:

- The development of the SANS standard
- The need for a fire alarm system
- The legal implications of the SANS standard
- Why fire detection systems are installed

#### **Assessment:**

Learner to describe the development of the SANS standard, its legal implications and how and where variations to the standard may be used.

### **Outcome 2: The need for categories of fire alarm and detection systems in accordance to SANS 10139.**

#### **Learning Outcomes:**

To include:

- The description and explanation of all the listed SANS categories.

#### **Assessment:**

Learner to describe:

- The different categories of fire detection systems
- The application of the various categories.

### **Outcome 3: System components and the monitoring and integrity of circuits.**

#### **Learning Outcomes:**

To include :

- The design and approval requirements of fire detection components
- The monitoring of fire detection circuits
- Fire detection systems in explosive atmospheres

**Assessment:**

Learner to demonstrate a knowledge of the importance of monitoring of circuits, approvals and reliability of components of a fire detection system.

**Outcome 4: The use of cables and support methods in fire detection systems.**

**Learning Outcomes:**

To include:

- A description of the type of cables allowable for use
- The installation method of fire alarm cables
- The support method of fire alarm cables
- Installing network cables

**Assessment:**

Learner to identify each type of cable allowable for fire detection systems. How to install these cables and the support methods allowable for cables.

**Outcome 5: Zoning of detectors, manual call points and sounders.**

**Learning Outcomes:**

To include:

- How to configure fire detection zones
- How to configure manual call point zones
- How to configure alarm zones

**Assessment:**

Learner to describe how to zone the building for various detection components.

**Outcome 6: Use of Audible alarm devices, Visual alarm devices and portable alarm devices.**

To include:

- Where and how to install audible alarm devices
- Where and how to install visual alarm devices
- Where to use portable alarm devices

**Assessment:**

Learner to explain the use of fire alarm sounders and visual indicators when used in a fire alarm systems.

Learner to explain the function and use of portable alarm devices.

## **Outcome 7: The application and use of staged fire alarms and fire brigade signaling systems.**

### **Learning Outcomes:**

To include:

- What are staged fire alarm systems
- Where would one use a staged fire alarm system
- Where is direct signaling to the fire brigade required

### **Assessment:**

Learner to explain the use of staged fire alarm systems and the use of fire brigade signaling systems.

## **Outcome 8: Fire detector and manual call points usage and siting.**

### **Learning Outcomes:**

To include:

- The types and application of all fire detection devices
- The types and application of manual call points
- Where fire detectors must be installed
- Where manual call points must be installed

### **Assessment:**

Learner to describe where and what type of devices need to be installed.

## **Outcome 9: Siting of fire detectors on flat ceilings and pitched roofs.**

### **Learning Outcomes:**

To include:

- The mounting positions of fire detectors on flat ceilings and pitched roofs
- The method of calculating the quantity of fire detectors required for flat and pitched roofs

### **Assessment:**

Learner to demonstrate how to calculate the quantity of fire detector required and the mounting position of these detectors

## **Outcome 10: Siting of fire detectors in escape routes and corridors, ceiling and floor voids, roofs with beams, cells and obstructions.**

### **Learning Outcomes:**

To include:

- The mounting positions of fire detectors in escape routes and corridors
- The mounting positions of fire detectors in ceiling and floor voids
- Where fire detectors are installed on ceilings with beams and obstructions are present

### **Assessment:**

Learner to describe where fire detectors are installed on all types of ceilings and roofs.

## **Outcome 11: Maximum, mounting heights of fire detectors.**

### **Learning Outcomes:**

To include:

- The maximum mounting height of point detectors
- The maximum mounting height of aspiration systems
- The maximum mounting height of beam detectors

### **Assessment:**

Learner to describe the maximum mounting height of fire detectors.

## **Outcome 12: Siting of fire detectors types other than point type detectors.**

### **Learning Outcomes:**

To include:

- The mounting positions of beam fire detectors
- The mounting positions of linear heat fire detectors
- The mounting positions of aspiration fire detectors
- The mounting positions of flame detectors
- The mounting positions of duct probe detectors

### **Assessment:**

Learner to describe where all fire detector types are installed.

## **Outcome 13: Power supplies, calculations and electromagnetic compatibility.**

### **Learning Outcomes:**

To include:

- The types of power supplies required for fire alarm systems
- The stand by time of batteries under power fail conditions
- How to calculate the correct battery size for a system
- Avoiding electromagnetic interference

### **Assessment:**

Learner to demonstrate the requirements of power supplies for fire detection systems.

## **Outcome 14: Limiting false alarms.**

### **Learning Outcomes:**

To include:

- Understanding the various filtering arrangements
- The need to reduce false alarms
- The types and categories of false alarms
- Soak tests

### **Assessment:**

Learner to describe the need to reduce and limit false alarms.

## **Outcome 15: Responsibilities of persons dealing with fire alarm systems Inspection, testing and commissioning.**

### **Learning Outcomes:**

To include:

- Installer responsibility
- End user responsibility
- Testing of fire alarm systems
- Inspection and commissioning fire alarm systems
- Handing over of fire alarm systems

### **Assessment:**

Learner to describe the entire process of completion of the fire detection installation and the importance of proper commissioning.

The user must be told of his requirements to use and maintain the fire alarm system.

## **Outcome 16: Documentation and certification.**

### **Learning Outcomes:**

To include:

- The requirements for documentation
- The supply and use of log books
- The requirement for certifying each stage of the project

### **Assessment:**

Learner to describe the hand over and documentation processes.