

# SAQCC FIRE

## D&GS TRAINING SUB COMMITTEE

### COURSE CURRICULUM

<b>COURSE</b>	<b>Standards Training SANS 306</b>	
<b>ORIGINATOR</b>	<b>Keith Norgate</b>	
<b>DATE</b>	9th January 2014	
<b>Amendment 1</b>	25th January 2014	Layout changes
<b>Amendment 2</b>	06th February	Items added
<b>Issued</b>	28th May 2014	
<b>Version 2</b>	02nd April 2015	Errors corrected

EQUIVALENT TRAINING COURSES AVAILABLE		
TITLE	TRAINING SCHOOL	CONTACT DETAILS
Standards Training SANS 306	Fire Systems Training	011 450 4706

<b>STATUS OF CURRICULUM</b>	-	Issued
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<b>EQUIVALENT UNIT STANDARD</b>	None
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#### PURPOSE OF TRAINING COURSE

This training course is for learners to gain knowledge of the National standard for CO<sub>2</sub> gas suppression systems which includes the design, installation, commissioning and maintenance of CO<sub>2</sub> systems.

Learners who complete this course will obtain knowledge of how to assess, install, commission and maintain these systems..

#### LEARNING ASSUMED TO BE IN PLACE

This course assumes the learner has already proved competent in:

- Gas supplier training 1,2,and 3
- Commissioning and servicing of gas systems.
- Installation and commissioning of fire detection and gas release panels

## **OUTCOMES REQUIRED**

### **Topics Covered:**

1. Scope of SANS 306
2. Characteristics and properties of CO<sub>2</sub>
3. Components of a CO<sub>2</sub> gas system
4. Pipes and nozzles used for CO<sub>2</sub> systems
5. Requirements and design of total flooding systems
6. Requirements and system design of local application systems
7. Operation of gas systems
8. Hazards and safety requirements for CO<sub>2</sub> gas systems
9. Commissioning, testing and servicing of CO<sub>2</sub> gas systems

### **Outcome 1: Characteristics of CO<sub>2</sub> and the Scope of SANS 306**

#### **Learning Outcomes:**

To include:

- Scope of SANS 306
- Characteristics of CO<sub>2</sub>
- Properties of CO<sub>2</sub>
- Uses of CO<sub>2</sub>
- Methods of application of CO<sub>2</sub>

#### **Assessment:**

Learner to demonstrate knowledge of the characteristics, properties and application of CO<sub>2</sub> gas suppression.

### **Outcome 2: System Components.**

#### **Learning Outcomes:**

To include :

- Quantity of CO<sub>2</sub>
- All the components that make up a CO<sub>2</sub> system
- Storage containers

#### **Assessment:**

Learner to demonstrate knowledge of the components that make up a CO<sub>2</sub> system.

## **Outcome 3: Pipe work and nozzles**

### **Learning Outcomes:**

To include:

- Pipe specifications
- Installation of pipe work
- Discharge nozzles
- Installation of nozzles
- Specification and installation of manifolds

### **Assessment**

Learner to demonstrate a knowledge of pipe and nozzles.

## **Outcome 4: Total flooding systems.**

### **Learning Outcomes:**

To include:

- Enclosures
- Designing surface or deep seated fires
- Volume factors
- Leakage
- Rates of application
- Rotating machinery
- Explain design examples
- Room integrity testing

### **Assessment:**

Learner to describe the design methodology for total flooding systems and demonstrate knowledge of total flooding system design

## **Outcome 5: Local application systems.**

### **Learning Outcomes:**

To include:

- General design
- Quantity of CO<sub>2</sub>
- High pressure storage
- Rates of discharge
- Surface area method of design.
- Volume method of design.
- Distribution nozzles
- Explain design examples

### **Assessment:**

Learner to describe the design methodology for systems and demonstrate his knowledge of local application system design

## **Outcome 6: System operation**

### **Learning Outcomes:**

To include:

- Manual operation
- Automatic operation
- Audible and visual alarms

### **Assessment:**

Learner to describe the operation of CO<sub>2</sub> systems

## **Outcome 7: Safety Precautions.**

### **Learning Outcomes:**

To include:

- Safety of total flooding systems
- Safety of local application systems
- Warning signs
- Electrical hazards
- Breathing apparatus

### **Assessment:**

Learner to understand the safety requirements of CO2 systems

## **Outcome 8: Commissioning, Servicing.**

### **Learning Outcomes:**

To include:

- Commissioning
- Service schedule
- User inspection programme

### **Assessment:**

Learner to describe the commissioning servicing and user inspection requirements.