

# **OCCUPATIONAL PROFILE**

## **FIRE FIGHTING EQUIPMENT TECHNICIAN (Special Class Electrician, Fire Detection System Designer)**

### **CURRICULUM CODE: 2015-672107-001**

#### **1. OCCUPATIONAL PURPOSE**

A Fire Fighting Equipment Technician installs and maintains portable and wheeled extinguishers, hose reels and hydrants being the combination of all technical, administrative and supervisory actions required to achieve compliance with legislation, national standards and their normative references.

#### **2. ALTERNATIVE TITLES AND SPECIALISATIONS**

- Fire Extinguisher Maintenance Technician
- Fire Extinguisher Service Technician

#### **3. OCCUPATIONAL TASKS**

- Implement and maintain regulatory compliance
- Site and install portable and wheeled firefighting equipment, hose reels and hydrants
- Maintain, test and repair portable and wheeled fire extinguishers
- Maintain, test and repair hose reels and hydrants and associated components and equipment

#### **4. CURRICULUM STRUCTURE**

KM 01: Basic numeracy and literacy

KM 02: Fundamentals of communication

KM 03: Legislation, national standards and normative references

KM 04: Basic principles of firefighting, fire extinguishers, hydrants, and hose reels

KM 05: Fundamentals of installation and siting

KM 06: Basic Pressure Vessel construction

- Cylinder construction
- Condition
- Threads Welds
- Markings

KM 07: Tools, portable power tools and specialist equipment

KM 08: Maintenance theory of portable and wheeled fire extinguishers

KM 09: Concepts of fixed water systems (Hose reels and hydrants)

- Maintain up stream of hose reel valve and hydrant clack washer
- Inspect and report condition of immediate connecting pipework
- Inspect and report condition of boosters, hydrant hoses, branch pipes and of foam inducing equipment

KM 10: Quality control documentation

- Measures
- Traceability
- Management control
- Workshop practices
- Material handling
- Transportation

## **5. OCCUPATIONAL TASKS**

### **OCCUPATIONAL TASK 1**

Implement and maintain regulatory compliance

### **UNIQUE PRODUCT OR SERVICE**

Legally compliant administrative and supervisory controls

### **OCCUPATIONAL RESPONSIBILITIES**

PM01: Identify and understand organization control of the management representative

PM02: Identify and understand work instructions

PM03: Requirements of registered persons

PM04: Complete and control documentation

- Various types of training
- Stock control
- Hand tools and production control equipment
- Production control
- Plant and equipment
- Vehicles used for reconditioning purposes and vehicle file documentation

## **OCCUPATIONAL CONTEXT**

WM01: SANS 1475 and other related legislative requirements:

- Organizational controls and responsibility procedures
- Personal identification and responsibilities procedures for all technical staff
- Operational procedures and document control:
  - Work Instruction, Risk Assessment and standard operation procedures
  - Formal and informal training
  - Stock control and approved suppliers
  - Tooling requirements and calibration pertaining to permanent workshops and mobile vehicles
  - Traceability involving production control and ISO quality control systems.
- Customer complaints and defective equipment
- Document controls and investigation
- Site specific Health & safety files in term of the construction regulations
- Pressure testing (both high and low-pressure vessels)
- Customer control equipment registers (including SANAS pressure Test Documentation)
- Mobile Vehicles
- Controlled equipment and tooling for Mobile Vehicles

## **OCCUPATIONAL TASK 2**

Site and install portable and wheeled firefighting equipment, signage, hose reels and hydrants

## **UNIQUE PRODUCT OR SERVICE**

Installed and compliant portable and wheeled firefighting equipment, signage, hose reels and hydrants

## **OCCUPATIONAL RESPONSIBILITIES**

PM05: Use installation tools and protective equipment

- Identify, use and care for basic hand tools
- Identify, use and care of portable electrical drills and extension leads
- Identify, use and care Ladders
- Identify, use and care of measuring and weighing equipment

- Identify, use and care of pressure equipment
- PM06: Use demarcation methods
- Identify the correct demarcation method
  - Identify and use tapes and paints
  - Use correct paint for a specific surface
  - Draw the demarcated area
  - Paint a demarcated area
- PM07: Work with products and components
- Identify the correct mechanical type of fastener
  - Use mechanical types of fasteners (Screw Shields, Plugs, Bolts and Screws, Toggle bolts, hollow & dry wall screws, small diameter sleeve anchors, wedge anchors, nuts, bolts, rivets, and screws and lag bolt shields)
- PM08: Drill holes (Not restricted to wall, girders, vehicles, woods etc.) for the installation of vehicle brackets, signage, backing boards, boxes/cabinets, and extinguisher wall hanging brackets.
- Use Masonry bit
  - Respond to task risks
  - Use wood or metal drills
  - Vehicles and machinery hidden looms, electrical components, fuel lines, air lines, fuel tanks, hydraulic lines, and crash supports structures
- PM09: Work with the various areas of installation
- Identify the installation area (Concrete, Brickwork, Plaster Brickwork, Breeze Blocks, Hollow Concrete Blocks, Dry Lined Walls, Plaster Walls, Timber walls, Partition Walls, Chipboard, Metal Girders (not support girders unless special clamping type bracket), Shelving, plastics, and Vehicles.
- PM10: Site and install portable and wheeled firefighting equipment, signage, hose reels and hydrants

## **OCCUPATIONAL CONTEXT**

- WM02: Processes of siting and installation of products and components
- WM03: Procedures for working at heights
- WM04: Reading fire and evacuation plans

## **OCCUPATIONAL TASK 3**

Maintain, test and repair portable and wheeled fire extinguishers

## **UNIQUE PRODUCT OR SERVICE**

Compliant portable and wheeled fire extinguishers

## **OCCUPATIONAL RESPONSIBILITIES**

PM11: Work safe and respond to emergencies

- Read and respond to safety signage

PM12: Identify and respond to regulatory and legislative non-compliances

PM13: Identify and respond to the legal compliancy requirements for portable and mobile firefighting products

PM14: Test and repair hand portable and mobile fire extinguishers both stored pressure, and cartridge types

PM15: Dismantle, inspect, assess, repair and assemble hand portable and wheeled extinguishers both stored pressure and cartridge types

- Identify, remove and install mechanical components
  - Labels, gaskets, seals, 'O' rings, and anti-tamper seals

PM16: Diagnose and repair faults on hand portable and mobile fire extinguishers both stored pressure, and cartridge types.

PM17: Use of Mediums, and Gases

- Identify and use all types of firefighting mediums
- Work with Medium ratings
- Identify and use inert gases used for firefighting extinguishers
- Calculate and maintain the required medium tolerance requirements
- Identify and maintain pressure requirements for various types of fire extinguisher

## **OCCUPATIONAL CONTEXT**

WM05: Receipt inspection procedures

WM06: SANS Standards and manufacturers requirements

- Stripping, and removing components procedure
  - Low Pressure Stored Pressure Types
  - High Pressure (CO<sub>2</sub>)
- Inspect Components
- Inspection and testing of mediums including life spans, disposal, using environmental regulations
- Pressure testing procedure (including SANAS requirements for high pressure cylinders)

Drying procedures using SANS standards and Manufacturers requirement

- Use of expellant (material safety data sheets, Nitrogen, Argon, Helium, CO2, Compressed Air)
- Refilling with Medium Procedures using safe working practices

WM07: Medium and Expellant calculation procedures

WM08: Verification / certification / maintenance, and safe working procedures of pressurising, weighing, measuring equipment pre-use using SANS standards and other associated documentation

WM09: Pressurising low-pressure extinguishers and filling of CO2 extinguishers

## **OCCUPATIONAL TASK 4**

Maintain, test and repair hose reels and hydrants and associated components and equipment

## **UNIQUE PRODUCT OR SERVICE**

Compliant hose reels and hydrants and associated components and equipment, booster, hydrant hose, and branch-pipes

## **OCCUPATIONAL RESPONSIBILITIES**

PM18: Conduct / perform scheduled maintenance on fixed hose reels and hydrants

- Test and repair fixed hose reels and hydrants

PM19: Dismantle, inspect, assess, repair and assemble fixed hose reels and hydrants both above and below ground.

PM20: Diagnose and repair faults on fixed hose reels and hydrants

PM21: Identify, use and care for hose reel and hydrants

PM22: Identify, remove and install mechanical components

- Labels, gaskets, seals, 'O' rings, gland packing, and anti-tamper seals

PM23: Identify and respond to legal compliancy requirements for hose- reel firefighting products

PM24: Identify and respond to the legal compliancy requirements for hose reels and hydrants

PM25: Identify and respond to regulatory and legislative non-compliances

PM26: Work with water supply piping

PM27: Work with foam generating equipment, boosters, hoses, and branch-pipes

- PM28: Perform preventive and scheduled maintenance on foam generating equipment, boosters, hoses, and branch-pipes
- Inspect, assess, repair and assemble foam generating equipment, boosters, hoses, and branch-pipes.
  - Diagnose and repair faults on foam generating equipment, boosters, hoses, and branch-pipes.
- PM29: Perform Hose Inspections
- Conduct a Wet Test
  - Identify and use drying procedures
  - identify and use stowage method
- PM30: Identify and respond to regulatory and legislative non-compliances

## **OCCUPATIONAL CONTEXT**

WM10: Hose Reel service and fault-finding procedures

WM11: Procedures for dismantling and installation Hose Reel Drum stream of valve

WM12: Procedures for Hydrant above and below ground level service and fault finding

WM13: Maintenance and inspection procedures for Branch pipes, Boosters, Hydrant hose

## **6. ENTRY REQUIREMENTS**

NQF Level 2 Mathematical Literacy, Communication, Numeracy, Maths and Science

## **7. ASSESSMENT MODULE**

The assessment will be conducted by means of method / a combination of methods at an accredited assessment centre/registered assessment site by a registered assessor /invigilator registered by the SAQCC FIRE.

### **External Assessment Model**

The assessment will be conducted by means of method / a combination of methods at an accredited assessment centre/registered assessment site by a registered assessor/invigilator registered by the SAQCC FIRE.

### **Examples**

The external integrated assessment will be conducted by means of a written examination at decentralised approved assessment sites and marked by evaluators appointed by the SAQCC FIRE.

The external assessment will include one written phase test at an approved assessment site during the training period as well as a final integrated assessment conducted in the workplace and evaluated by an assessor registered with the SAQCC FIRE at the end of the training period.

The external integrated assessment will include the evaluation of workplace assignment as well as a written examination at decentralised assessment sites, approved by the SAQCC FIRE.

### **Assignments to be Evaluated Externally**

- None

### **Eligibility requirements to qualify for external summative assessment**

- To qualify for an external assessment, learners must provide proof of completion of all required modules by means of statements of results and work experience.
- Foundational Learning Competence or equivalent is a prerequisite for access to the external integrated summative assessment.

### **Criteria for registration of assessors**

- A qualified person with at least relevant five years' experience in the occupation
- Completion of a relevant assessor's course
- Membership of SAQCC Fire, FDIA, IFTA and FFETA