

## National Occupational Standards

**Sector:** Building and Construction

**Occupation:** Assistant Tower Crane Operator

**MQF Level:** 2

**Units:**

- ATCO201: Contribute to health and safety requirements in the workplace
- ATCO202: Assist in the daily walk around checks prior to operating the tower crane
- ATCO203: Assist in the drawing of the lift plan and understand the lift plan
- ATCO204: Assist in the changing of the reeving system
- ATCO205: Assist the tower crane operator during lifting operations

## **ATCO201: Contribute to health and safety requirements in the workplace**

This unit lists the knowledge and skills required by a person holding this position to contribute to carrying out safe work activities in compliance with health and safety activities.

Upon completion of this unit the persons carrying out this work will possess the necessary knowledge and skills to follow health and safety procedures which ensure that their actions do not create health and safety risks to self or to others.

### Performance Criteria

The candidate must have the necessary knowledge and skills to:

1. Follow safe working practices in accordance with the workplace health and safety regulations.
2. Identify potential hazards associated with own work practices and the workplace and report them in accordance with organisational procedures.
3. Follow correct procedures in the event of hazards or injury or ill health.
4. Carry out work practices to comply with supplied information to contribute to a healthy, safe, and secure working environment.

### **Required Knowledge**

The Level 2 Assistant Tower Crane Operator must know and state:

1. The roles and responsibilities under the Health and Safety Act as amended by Act XXVII of 2000 or any subsequent current legislation.
2. The health concerns associated with the workplace and safe practices when carrying out work activities.
3. The importance of co-operating with their employer on matters related to health and safety to safeguard their own wellbeing and that of others affected by their work activities.
4. The organisational policies regarding legislation and guidance which need to be complied with.
5. The potential hazards in the workplace such as electricity and other utility services, contaminants, hazardous and non-hazardous substances, waste materials, working at height, work equipment, access equipment, obstructions, fire risks, manual handling, proximity, third party hazards, and changing weather conditions.
6. The importance of being aware and alert to the presence of hazards on site and other work areas.
7. The effect of any toxic or hazardous substances detected on site and what precautions need to be taken.
8. The importance of health surveillance and fitness to operate – should not be under the effect of drugs, alcohol and medicines or any medical condition that could impair his/her performance when operating the tower crane.
9. The importance of correct storage of combustibles and chemicals on site.

10. The arrangements to follow regulations regarding security on site and in the workplace e.g., storage of materials, components, tools, plant, and equipment.
11. The importance of working around mobile plant and equipment on site- keeping safe distances away from working machinery.
12. The security arrangements and procedures that should be observed and followed when working on site.
13. The procedures for dealing with accidents and emergencies associated with the workplace and environment.
14. The importance of reporting accidents and near misses to superiors.
15. The personal responsibility for behaviour of health, safety and welfare on site and the consideration of others.

### Required Skills

The Level 2 Assistant Tower Crane Operator must be able to follow instructions to:

1. Comply with their individual duties and legal obligations under the Health and Safety Act XXVII of 2000 or any subsequent current legislation.
2. Work according to health and safety regulations and other relevant regulations that apply to the work requirements.
3. Comply with safe working practices in accordance with organisational procedures.
4. Recognise any hazards and hazardous materials associated with workplace activities and how changing circumstances could increase those hazards.
5. Report any hazards and risks and changing circumstances to superiors in accordance with organisational procedures.
6. Report near misses and accidents to superiors.
7. Recognise emergency situations and report them in accordance with organisational requirements.
8. Identify and use the provided Personal Protective Equipment (PPE) and Respiratory Equipment (RPE) when necessary to carry out work duties.
9. Comply with organisational procedures for safely working around mobile plant and Equipment.
10. Assist in carrying out work activities to protect work areas from damage.
11. Demonstrate good personal behaviour for workplace health safety and welfare.

## **ATCO202: Assist in the daily walk around checks prior to operating the tower crane**

This unit lists the knowledge and skills required by a person holding this position to contribute to the carrying out of the daily walk around check of the tower crane.

Upon completion of this unit the persons carrying out this work will possess the necessary knowledge and skills to assist the tower crane Operator in the daily walk around check which will then ensure that the tower crane to be operated in this lift is free from any visible defects.

### **Performance criteria**

The candidate must have the necessary knowledge and skills to:

1. Identify any faults in the tower crane.
2. Follow the correct procedure to report any faults or defects to his superiors.
3. Assist in rectifying any faults.
4. Prepare the tower crane for lifting.

### **Required Knowledge**

The MQF Level 2 Assistant Tower Crane Operator must know and state:

1. The effect of any defects on the proper operations of the tower crane.
2. How to follow organisational procedures in assisting the mobile crane operator in filling of the daily walk around check sheet.
3. How to follow and understand instructions given by the crane operator in the checking of the tower crane during the daily walk around check.
4. How to understand the tower crane structure, jibs, drives, slewing assembly, trolley, sheave and hook block, wire ropes, hoisting units, motors, and brakes.
5. Where the tower crane electrical supply panel is positioned, and how to switch ON/OFF the supply.
6. How to interpret load labels attached to the tower crane.
7. The decals symbols on the tower crane remote.
8. The position of tower crane sensors and have basic knowledge about the function of load moment indicators and tower crane instrumentation.
9. How to report any defects in the tower crane.

### **Required Skills**

The MQF Level 2 Assistant Tower Crane Operator must be able to follow instructions to:

1. Know how to select and use the correct PPE during the walk around check.

2. Know how to follow instructions the tower crane operator during the daily walk around check.
3. Know how to look for possible defects in all parts of the structures including mainly the machine room, counter jib, wire ropes, guides, and other vital components in the operations of the tower crane.
4. Know how to act and report possible defects.
5. Know how to climb safely onto the tower crane structure.
6. Know how to switch ON/OFF the tower crane electrical supply.

### **ATCO203: Assist and understand the lift plan**

A lift plan is to be planned prior to every lift; the lift plan should include all the required details to carry out the lift safely.

Upon completion of this unit the assistant tower crane operator should be able to assist in the drawing up of this lift plan. The assistant tower crane operator should also be able to understand the lift plan and assist the tower crane operator in its implementation.

#### Performance criteria

The candidate must have the necessary knowledge and skills to:

1. Identify potential hazards for this lift.
2. Report those hazards to his superiors so as these are listed and included in the risk assessment.
3. Understand the instructions of the mobile crane operator during the briefing of the lift plan.
4. Assist in preparing the lifting tackle to be utilised for this lift.

#### **Required Knowledge**

The MQF Level 2 Assistant Tower Crane Operator must know and state:

1. That all risks should be mitigated in a risk assessment.
2. That hazards should be reported to the superiors and take mitigation measures how to reduce or eliminate the risk of an accident.
3. The range and the lift capacity of this tower crane.
4. The load weight to be lifted, load height and operating radius.
5. The SWL, safe working load of the lifting tackle.
6. The lift plan, taking into consideration all the required factors.

#### **Required Skills**

The MQF Level 2 Assistant Tower Crane Operator must be able to follow instructions to:

1. Look for hazards nearby the area where the tower crane is set up.
2. Give the required feedback to his superiors about the lift to be carried out.
3. Understand the briefing of the lift plan, given from his superiors.
4. Select the appropriate lifting gear as specified in the lift plan.

### **ATCO204: Assist in the changing of the reeving system**

This unit lists the knowledge and skills required by a person holding this position to contribute to the changing of the reeving system of the tower crane.

Upon completion of this unit the assistant tower crane operator carrying out this work will possess the necessary knowledge and skills to assist the tower crane operator in changing from two wire to four wire, or vice versa, the assistant tower crane operator should be able to communicate and understand the orders given by his superior

#### **Performance criteria**

The candidate must have the necessary knowledge and skills to:

1. Identify potential hazards during changing of the reeving system.
2. Report those hazards to his superiors and discuss mitigation measures with his superiors.
3. Understand the instructions of the tower crane operator during the changing of the reeving system.
4. Communicate effectively and give feedback to the tower crane operator during changing of the reeving of the tower crane.

#### **Required Knowledge**

The MQF Level 2 Assistant Tower Crane Operator must know and state:

1. How to lock the reeving system.
2. The procedure when changing the reeving system.
3. The difference between two wire and four wire, the effect on lifting speed and lifting capacity.
4. The proper operation of the tower crane and realise the consequences in the advent that the reeving system is not properly locked.
5. How to assist the tower crane operator change the reeving system.

#### **Required Skills**

The MQF Level 2 Assistant Tower Crane Operator must be able to follow instructions to:

1. Understand the instructions given from his superiors.
2. Assist in the changing of the reeving system.

## ATCO205: Assist the tower crane operator during lifting operations

This unit lists the knowledge and skills required by a person holding this position aid the tower crane operator during the lifting operation.

Upon completion of this unit, the assistant tower crane operator carrying out this work will possess the necessary knowledge and skills to assist the tower crane operator during the operation of the tower crane on site, the assistant tower crane operator should be able to communicate and understand the orders given by his superior.

### Performance criteria

The candidate must have the necessary knowledge and skills to:

1. Identify potential hazards during the lifting operation.
2. Report those hazards to the tower crane operator and discuss mitigation measures with the tower crane operator.
3. Understand the instructions of the tower crane operator during the operation of the tower crane.
4. Watch out for any changing parameters during the lifting operation.
5. Communicate effectively and give feedback to the tower crane operator, during lifting.
6. Act as a spotter and direct the tower crane operator in his manoeuvring.
7. Understand the required skills in slinging and rigging.

### Required Knowledge

The MQF Level 2 Assistant Tower Crane Operator must know and state:

1. That for no reason persons should not be present below suspended load.
2. How to identify any hazards that were not identified in the lift plan.
3. The instructions given from his superiors.
4. To never suspend load on third party property or public areas.
5. That public access areas where load is to be suspended should be barricaded.
6. That persons should never be present under suspended load.
7. When it is required to act as spotter and guide the tower crane operator in his manoeuvre.
8. How to assist in slinging and rigging.

### Required Skills

The MQF Level 2 Assistant Tower Crane Operator must be able to follow instructions to:

1. Identify any hazards that were not identified in the lift plan.
2. Keep a constant look out on during the lifting operation.
3. Understand the instructions given from his superiors.
4. Understand when it is required to act as spotter and guide the tower crane operator in his manoeuvre.
5. Understand when it is required to coordinate with the tower crane operator and instruct other personnel to follow his instructions.
6. Understand and recognize the skills required for slinging and rigging.