

National Occupational Standards

Sector: Building and Construction

Occupation: Asphalt Plant Operator

MQF Level: 3

Units:

- APO301: Apply Occupational Health and Safety during Work-Practices
- APO302: Identify Systems, Equipment and Components

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APO301: Apply Occupational Health and Safety during Work-Practices

This unit is about being able to use safe procedures and safe work practices. The persons carrying out this work must possess the necessary knowledge and skills to ensure that their actions do not create health and safety risks to themselves and others, identify risks and hazards associated within the working environment, tools and equipment and materials and substances used.

Performance Criteria

The candidate must have the necessary knowledge and skills to:

1. Carry out safe working practices to prevent hazards and to ensure the safety of oneself, workers, and members of the public.
2. Carry out safe working practices when using appropriate equipment and materials to prevent damages to work areas and injuries to oneself and 3rd parties.
3. Ensure that all personnel use protective clothing and safety equipment according to specifications issued by manufacturers and know the whereabouts of first-aid equipment.
4. Ensure the usage, handling, and storage of materials hazardous to health is done in a safe manner.
5. Carry out a risk assessment to cover the job assigned and the working area, including environmental risk.
6. Ensure that all fire safety systems are in place.
7. Issue a notice of safety violations and follow-up on remedial measures required in case of safety violations reported.
8. Evaluate workplace for cleanliness including waste disposal and vermin control.

Required Knowledge

The Level 3 Asphalt Plant Operator must know and explain:

1. The roles and responsibilities of themselves and others under the Health and Safety Act.
2. The health and safety risks associated with their role which includes tools, construction vehicles, materials and equipment used and working practices and procedures.
3. The regulations, standards, and systems for safety requirement of electrical, water, drainage and mechanical installations, equipment, and systems.
4. The environmental risks such as deficient air and water quality.
5. The fire safety system requirements and the risks associated with them.
6. The potential hazardous material commonly found at the workplace.
7. The procedures for dealing with potential hazardous material in the place of work.
8. The health concerns associated with the workplace and safe practices for different ongoing work practices on site.
9. The hazards and potential hazards at the place of work (such as electricity, slippery and uneven surfaces, dust and fumes, handling and transporting, contaminants and irritants, fire, improper use of tools and equipment).
10. The importance of being alert to the presence of hazards in the place of work.
11. The responsible persons to whom to report health and safety matters or any other occurring hazards.
12. The emergency procedures in the place of work.
13. The first aid facilities that exist within the work area.
14. The correct procedure to make use of barricades, industrial hurdles, and warning signs at the place of work.

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15. The necessary safety precautions including the use of protective clothing and equipment for a range of applications including situations when helping other sector trade persons.
16. When it is required to close domestic water services from the main water supply; switch off electrical supply.
17. Any toxic effect from materials commonly used at the plant.
18. The preventative and remedial actions to be taken in the case of exposure to materials hazardous to health.
19. The waste disposal and vermin control procedures.

Required Skills

The Level 3 Asphalt Plant Operator must be able to:

1. Identify which health and safety procedures are relevant to the working environment.
2. Seek expert assistance when help is needed.
3. Ensure compliance with duties and obligations as defined by the Occupational Health and Safety Act 2000 and recent amendments.
4. Follow workplace policies and employers' instructions for the safe use and maintenance of tools and equipment.
5. Control health and safety hazards within the job responsibility.
6. Report any hazards which may present risk to relevant persons.
7. Follow correct procedures in the event of injuries to themselves or others.
8. Take remedial action where work methods are not in line with control measures noted and identified from risk assessment.
9. Ensure adherence to work production and processes as agreed with the employer.
10. Read, interpret, and install warning signs and set up safety barriers around the plant as necessary.
11. Equip oneself with the appropriate protective clothing and safety equipment.
12. Use and store materials hazardous to health in a safe manner.
13. Monitor the workplace and maintain good housekeeping whilst keeping it free from hazards.
14. Communicate complex information regarding unfamiliar and unpredictable situations to colleagues and supervisors.
15. Advocate appropriate health and safety procedures.
16. Have the skill to observe and monitor site situations and materials to determine compliance with safety standards.

APO302: Identify Systems, Equipment and Components

This unit is about operating an asphalt plant to weigh, dry, heat and mix the ingredients to prepare asphalt and asphalt paving materials.

Performance Criteria

The candidate must have the necessary knowledge and skills to:

1. Produce quality asphalt product according to specifications.
2. Prepare and execute a plan for asphalt quality controls.
3. Inspect and test items of plant and equipment.
4. Manage corrective actions.
5. Direct and coordinate daily plant activities.
6. Input numeric and operational data into the computer systems for asphalt plant production processes.
7. Manage and report production and product yields.
8. Report mechanical failure and/or material inconsistencies.
9. Assist in calibration of equipment/perform calibration check.
10. Resolve quality nonconformance.
11. Conduct plant inspections and assist in audits.
12. Verify documentation and certificates for materials purchased/supplied.
13. Provide information to the manager to order the necessary materials for plant production and replenish inventory.
14. Operate plant equipment such as front-end loaders, skid steers and plant trucks.
15. Meet daily production targets.
16. Prepare and manage efficient work schedules of plant employees to meet daily targets.
17. Perform other duties that are directed to the relevant site.
18. Review and monitor plant equipment and systems to ascertain continuous and regular flow of materials and maintain certified products.
19. Oversee truck scales and the loading operations of trucks.
20. Design and implement plant improvements.
21. Handle material and cargo.
22. Operate and adjust plant pumps, valves, motors, feeders and other related equipment, vehicles, and machinery to ensure plant operations.
23. Keep record of outgoing trucks and asphalt production numbers and statistics.
24. Perform and oversee the set-up and take-down of portable asphalt plants.
25. Clean out and grease plant daily.
26. Work closely with Quality Control to ensure a quality mix is produced.

Required Knowledge

The Level 3 Asphalt Plant Operator must know and explain:

1. The project quality controls.
2. The different phases of quality control.
3. The range of materials, products, testing required, sampling procedures and work procedures applicable to the asphalt production process.
4. The different mix designs, aggregates, oils, and test results.
5. The methods and techniques to minimise wastage and to protect the environment.
6. How to safeguard the quality of the product.

7. The legislation in relation to road construction in Chapter 499. Testing and sampling equipment used.
8. The testing and sampling of equipment used.
9. The road and civil building construction, civil engineering principles, techniques and practices and the standard specifications used for asphalt and related materials.
10. The calibration of equipment and adherence to maintenance schedules.
11. The direction of equipment drivers/trucks.
12. How to solve plant operational problems.
13. The understanding and interpretation of technical documents, regulations, instructions, reports, charts, graphs, and tables.
14. Understands basic maths to be used for the job.
15. The maintenance practices.
16. The use of computers for data entry and retrieval.

Required Skills

The Level 3 Asphalt Plant Operator must be able to:

1. Distinguish between and apply the different testing for the different types of asphalt according to standard practices and procedures.
2. Distinguish between the different types of testing and sampling equipment for asphalt.
3. Apply procedures to minimise material waste and dispose waste as stipulated in the environmental protection act.
4. Use all related equipment, plant, and tools.
5. Plan.
6. Coordinate between different parties and stakeholders.
7. Be versant with relevant engineering terminology.
8. Understand contract documents, project drawings and contractual obligations.
9. Be versant with legislation, construction methods and material specifications.
10. Understand construction laboratory functions and testing.
11. Have sound judgement and decision-making skills.
12. Operate within test scheduling and priorities.
13. Operate simple machinery and measuring equipment including handheld tools and power tools.
14. Be familiar with manufacturing and construction methods and processes.
15. Measure and comprehend calculations using metric units.
16. Read, analyze, and interpret specifications for asphalt.
17. Time management and meeting deadlines.
18. Have the skills for making decisions in accordance with construction plans and specifications.
19. Have knowledge about mechanical aptitude.
20. Read dials, gauges, and the operation of the machinery to ensure that it confirms with the processing specifications.
21. Repair machinery using hand tools, welding, and power tools.
22. Maintain equipment and plant.
23. Work in a team organisation.