National Occupational Standards

Sector: Building and Construction

Occupation: Assistant Scaffolder

MQF Level: 2

Units:

- SCF201: Apply Occupational Health and Safety during Work-Practices
- SCF202: Identify systems, equipment and components
- SCF203: Reading of drawings and calculations
- SCF204: Setting Out, Erecting and Dismantling Scaffolds and Access Equipment

SCF201: Apply Occupational Health and Safety during Work-Practices

This unit is about being able to use safe procedures and safe work practices at sites undergoing new construction or maintenance and repair. 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 others, can identify risks and hazards associated with the working environment, with tools, equipment, 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 workers and members of the public.
2. Carry out safe working practices using appropriate equipment and materials to prevent damages to work areas and injuries to himself and 3rd parties.
3. Set up safety barriers around a work environment hazard to protect workers and members of the public.
4. Use appropriate protective clothing and safety equipment and know the whereabouts of first-aid equipment.
5. Use, handle and store materials hazardous to health in a safe manner.
6. Assist in carrying out a risk assessment to cover the job assigned and the working area required for the job and adhere to the risk assessment requirements.
7. Locate and switch-off temporary or fixed electrical switch gear, isolating valves as instructed in the health and safety procedures.
8. Collaborate with construction team members.
9. Take all measures to keep adequate working distance from overhead electrical cables.

Required Knowledge

The Level 2 Assistant Scaffolder must know and state:

1. The understanding of 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 include tools, materials and equipment used and working practices and procedures.
3. The Recognition of potential hazardous material at the workplace.
4. The understanding of the procedures for dealing with potential hazardous material in the place of work.
5. The understanding of the health concerns associated with the workplace and safe practices when carrying out work.
6. The seeking of expert assistance when help is needed.
7. The acknowledging of 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, heights, improper use of tools and equipment).
8. The understanding of the importance of being alert to the presence of hazards in the place of work.
9. The responsible persons to whom to report health and safety matters.
10. The emergency procedures in the place of work.
11. The first aid facilities that exist within the work area.
12. The understanding of the use of barriers and warning signs.
13. The understanding of the necessary safety precautions including the use of protective clothing and equipment for a range of applications (situation instead application).
14. The understanding of the methods used for protecting customers' property.

15. The understanding of when it is required to isolate domestic water services from the main water supply.
16. The description of any toxic effect of materials used.
17. The outline of the preventative and remedial actions to be taken in the case of exposure to materials hazardous to health.
18. The understanding of the importance to check and follow manufacturer instructions regarding 'expiry dates' and care and condition of Personal Protective Equipment.

Required Skills

The Level 2 Assistant Scaffolder must be able to follow instructions to:

1. Identify which health and safety procedures are relevant to the working environment.
2. Comply with duties and obligations as defined by the Occupational Health and Safety Act 2000.
3. Follow workplace policies and employers' instructions for the safe use and maintenance of tools and equipment.
4. Control health and safety hazards within the job responsibility.
5. Report any hazards which may present risk to persons.
6. Identify, tag according to employer policy and report using standard forms, defective personal protective equipment, defective tools and fittings.
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 resulting from relevant risk assessment.
9. Adhere to work production and installation procedures as officially instructed by the employer.
10. Comply with warning signs and sets up safety barriers around working area.
11. Make use of the appropriate protective clothing provided and safety equipment according to task.
12. Use and store materials hazardous to health in a safe manner.
13. Ensure that the immediate work area is kept free from hazards. With assistance communicate basic information in unfamiliar context to colleagues such as: report verbally and by means of pre-printed sketches provided by supervisors to colleagues in the erecting and dismantling stage of a scaffold.
14. Adhere to and suggest appropriate health and safety procedures.
15. Explain possible hazards with sway transoms considered as a tie with special attention to spacing of ties, box ties and lip ties, tie patterns, abnormal facades.
16. Assist in carrying out a site risk assessment.
17. Participate in using standard forms to carry out individual risk assessment, project team risk assessments, routine checks and maintenance of scaffolds following bad weather.

SCF202: Identify systems, equipment and components

This unit is about identifying the different access and scaffold systems, equipment and components for specific applications based on their technical properties. Typical workplace systems such as the direct and indirect environmental impacts of materials used for scaffolds are also discussed. When assisting, candidates are expected to show an increase in their knowledge and skills to eventually carry out tasks proactively with minimum supervision but still with limited overall responsibilities.

Performance Criteria:

The candidate must have the necessary knowledge and skills to:

1. The difference between types of scaffolding and access equipment based on their basic characteristics and classification.
2. State the basic criteria for the selection of scaffold.
3. State the tools, accessories and equipment used for scaffold erection and dismantling.
4. Identify and explain the basic characteristics and material requirements for Frame Scaffold, Birdcage scaffold, tower scaffold, modular scaffold.
5. Assist in keeping records of the quantity of materials used by project.
6. Assist in organizing stores and construction sites facilities.
7. Assist in carrying out functional checks on plant and equipment.

Required Knowledge

The Level 2 Assistant Scaffolder must know and state:

1. How to demonstrate knowledge of environmental management.
2. The metric units of weight and object centre of weight (centre of gravity) and basic relevance of line of force.
3. The rule of thumb and recommended instructions by suppliers regarding couplers, tubes and cantilever beam design.
4. The basic definition of unsymmetrical beams and prefabricated beams.
5. The basic technical characteristics of aluminum and steel tubes.
6. The recalling of the different types of ladders available on the market for specific access from scaffolds.
7. The recalling of the common defects of aluminum and steel tubes and fittings.
8. The construction site hazards commonly encountered to defective setting out or execution of work.
9. The hollow concrete block (brick) wall and the limestone wall limitation to anchor scaffolds.
10. The type of wood suitable for scaffold platforms.
11. The wood preservation methods.
12. Typical causes of scaffold incidents and the resulting learning points.
13. Simple digital and hard copies systems used to keep records and control of materials and equipment.
14. Workplace procedures regarding final decisions and work permits.
15. Environmental Regulatory requirements and Project environmental plans including equipment specifications dedicated for such tasks.
16. Basic routine checking procedures for accuracy checks of levelling instruments;
17. Workplace storage codes methods.

Required Skills

The Level 2 Assistant Scaffolder must be able to follow instructions to:

1. Assist in checking a truss-out scaffold for inadequate couplers.
2. Assist in checking cantilever scaffolds designs for stability and structure integrity.
3. Assist in checking tower and bridge scaffolds designs for stability and structure integrity.
4. Carry out the recommended best practices in the use of ladders considering and giving special attention not to use the following situations: mid-span supports, ladders at the end of platforms, ladders resting on the projected ends of the scaffold boards forming the platform, length and angle constrains, top not securely tied, the use of wedges under legs, no projection at the top, obstruction to foothold.
5. Identify the correct use of the following scaffolding and access equipment: System Scaffold, Tube and Fitting (Coupler) Scaffold, Base-supported Scaffold, Birdcage Scaffold, Bracket (Tank Builder's) Scaffold, Independent Run (Façade or Independent Tied) Scaffold, Mobile Scaffold, Tower Scaffold.
6. Identify and describe the main features of demolition scaffolds, weather protection and sheeted stone cleaning scaffolds, temporary roofs and canopies.
7. Assist in carrying out a visual survey of Scaffold tubes, scaffold couplers and fittings, scaffold boards and timber, technical data of prefabricated beams, prefabricated frames and scaffold systems, ropes, lashings, rigging, guys and anchors.
8. Assist to identify hazards when constructing and dismantling Independent ties scaffold considering and giving special attention to absence of bracings; wrong coaxial joint in tubes; undermined foundations; attachment of tarpaulins; unnecessary working lifts; overloading; neglected scaffolds over long periods.
9. Assist to identify hazards when constructing and dismantling prefabricated frame scaffold and system scaffolds with special attention to bad assumptions that prefabricated, and system scaffold do not require additional bracings; failure to use locking pins or wedges; lack of longitudinal stiffness when dismantling long projection components.
10. Assist to identify hazards when constructing and dismantling putlog scaffolds with special attention to insufficient grip of the putlog ends in stone and brickwork; dislodgement of the lower lift; removal of guard rail which leaves the joint in the ledger unassisted.
11. Assist to identify hazards as a result of: use of rotten boards; placing standards (posts) at the end of boards or across joints of boards; waterlogged ground; site surface water washing; excavation near sole plates; boards levelled with rubble; inadequate size of sole plate; sole plates on sloping surfaces.
12. Assist to identify hazards in bracing configuration with special attention to weak-in-line joints by using spigot pins; poor tightening of sleeve couplers; poor attachment of lifts to bracing systems; bracing not across ground level to top level scaffold bracing not in two directions; vertical and horizontal forces not related to forces in braces.
13. Assist to interpret the project environmental plan and establish resources required for its implementation.

SCF203: Reading of drawings and calculations

This unit is about understanding and interpreting scaffold and building drawings, methods to calculate quantities of fittings and elements, and methods to transform setting out measurements from drawings to site setting out. When assisting, candidates are expected to show an increase in their knowledge and skills to eventually carry out the tasks with minimum supervision but still with limited overall responsibilities.

Performance Criteria:

The candidate must have the necessary knowledge and skills to:

1. Read and interpret simplified plans and specifications to select scaffold fittings and elements under supervision.
2. Assist in establishing important building datum grids and levels.
3. Assist in the calculation of the quantities of scaffold fittings required to meet work schedules.
4. Assist in the calculation of linear measurements of diagonals, diameters and right-angle triangles in 2D and 3D structures.
5. Assist in the setting out of scaffold 'standards' (posts) correctly spaced as indicated in drawings.
6. Assist in the setting out of scaffold 'standards' on pitch circle diameter around circular structures.

Required Knowledge

The Level 2 Assistant Scaffolder must know and state:

1. The basic understanding of horizontal levels and horizontal planes, the vertical plumb line and the use of the spirit level in this context.
2. The basic understanding of compilations of overall linear dimensions from drawings.
3. The basic understanding of calculations involving quantities and costs of materials.
4. The basic understanding of calculations with ratios.
5. The basic understanding of X-axis, y-axis, variable charts and tables.
6. The understanding of drawings annotations used for levels, gradients and bearings.
7. A wide range of hand tools specifications and their use.
8. The techniques to produce manual simplified scaffold drawings.
9. The metric units of linear measurements, areas, force, pressure and fluid measurements.

Required Skills

The Level 2 Assistant Scaffolder must be able to follow instructions to:

1. Make use of height to base ratio requirements when using towers subjected to combined weights and wind forces.
2. Explain possible hazards when using Gim Wheels and Pulleys with special attention to when pulling at wide angles.
3. Convert linear dimension in metric units from millimeter to centimeters to meter.
4. Interpret common drawing symbols in elevations, sections and plans.
5. Measure cut to size and prepare pipes ready for use.
6. Use the 3:4:5 method to set right-angles on site
7. Interpret common and basic structural charts and structural plans.
8. Calculate areas and volumes of counterweights.
9. Convert between units of measurements: meters; centimeters and millimeters.
10. Use the basic functions of calculators and digital measuring instruments to measure linear and angular measurements.

11. Convert between tones to kilograms and milliliters to liters.
12. Use established basic factors to convert volume of material to weight (specific density).

SCF204: Setting Out, Erecting and Dismantling Scaffolds and Access Equipment

This Unit is about Setting Out, Erecting and Dismantling Scaffolds and Access Equipment. When assisting, candidates are expected to show an increase in their knowledge and skills to eventually carry out the tasks proactively with minimum supervision but still with limited overall responsibilities.

Performance Criteria:

The candidate must have the appropriate knowledge and skills to:

1. Clean, check and store plant, tools and equipment according to workplace practices.
2. Dispose unwanted materials according to project environmental policy and keep areas cleared from unwanted materials.
3. Assist proactively in setting out, construct and dismantle frame scaffolds, birdcage scaffolds, tower scaffolds, modular scaffolds.
4. Assist proactively in setting out, construct and dismantle independent tied scaffolds.
5. To communicate basic information in unfamiliar and unpredictable context to colleagues and first line supervisors using the correct scaffold technical terms.
6. Co-operate with colleagues, self-employed sub-contractors and all other construction site workers.
7. Take agreed responsibility for completing given scaffold erecting and dismantling tasks.
8. Assist proactively in developing work schedules.
9. Contribute to improve work activities.
10. Recall the roles and responsibilities of scaffold and construction teams.

Required Knowledge

The Level 2 Assistant Scaffolder must know and state:

1. Residential areas requirements.
2. Recalling of height of the top rail, mid rail, cross braces conditions, alternatives to guardrails.
3. The condition when to use fall arrest systems and personal fall arrest systems requirements.
4. Recognize conditions of when guardrails are not required and under what conditions can be removed.
5. Recalling of the general types of 'accesses' recommended and allowed.
6. The type of toe boards, screens, guardrail systems, debris nets, catch platforms, canopy structures and barricades that are available to protect from overhead falling objects.
7. Recalling of the maximum vertical tie spacing allowed.
8. The planning and scheduling methods.
9. The various procedures to calculate materials requirements.
10. The understanding of environmentally friendly waste management procedures.
11. The understanding of basic safety data sheets of various products.
12. Site isolation and traffic control responsibilities and authorities.
13. The understanding of traffic signs appropriate for roads approaching construction sites.
14. Equipment data sheets and routine maintenance manuals.

Required Skills

The Level 2 Assistant Scaffolder must be able to follow instructions to:

1. Recall basic recommended best practices to minimize hazards when installing pavement frames with special attention to not/ leaving long and un-braced bottom standards (posts); overloading; placing of all joint in the standards at the same level; longitudinal instability; not providing an equivalent of bottom standards to the upper standards; not adequate traffic fenders; lack of ties.
2. Recall basic recommended best practices regarding inside boards, guard rails and toe

boards with special attention to bay window and recess covering, fixing of boards at the ends of scaffold, around ladders, lapped boards.

3. Assist in constructing and dismantling the following Ordinary Access Scaffolding complete with all access equipment: Platforms and scaffoldings tied tothe face of a building, broad-area platforms, movable gangways, towers and masts.
4. Assist in constructing and dismantling of the following Special Scaffolds complete with all access equipment: Access birdcages, access towers in tube and couplers, towers-and- bridge scaffolds, frame scaffolds and system scaffolds, cantilever scaffolds, truss-out scaffolds.
5. Interpret simplified technical specifications from material schedules and data sheets.
6. Communicate with builders, steel fixers, formwork and falsework erectorsand supervisors.
7. Carry out preventive maintenance to hand tools, power tools and equipment.
8. Use lifting gear appropriately to assist in material handling operations.