



Bar Bender and Steel Fixer

QP Code: CON/Q0203

Version: 2.0

NSQF Level: 4

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Qualification Pack



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CON/Q0203: Bar Bender and Steel Fixer

Brief Job Description

Bar bender and Steel Fixer is responsible for efficiently marking, cutting, bending, fabricating, placing and fixing of reinforcement bars at the desired location using hand/ power tools, within the specified time and defined tolerance limits, following safe work practices.

Personal Attributes

Bar bender and steel fixers are expected to be physically fit to work across various locations with varied environmental conditions. The person should be organized, diligent, methodical, safety-conscious, and a prompt decision-maker. They should have good communication skills along with team spirit.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. [CON/N0204: Read and understand routine drawings / sketches and Bar Bending Schedule\(BBS\)](#)
2. [CON/N0205: Use hand and power tools for cutting and bending of reinforcement bars](#)
3. [CON/N0206: Prepare, fabricate, place and fix reinforcement bars for RCC structures](#)
4. [CON/N8001: Work effectively in a team to deliver desired results at the workplace](#)
5. [CON/N8002: Plan and organize work to meet expected outcomes](#)
6. [CON/N9001: Work according to personal health, safety and environment protocols at construction site](#)

Qualification Pack (QP) Parameters

Sector	Construction
Sub-Sector	Real Estate and Infrastructure construction
Occupation	Bar Bending and Fixing
Country	India
NSQF Level	4
Aligned to NCO/ISCO/ISIC Code	NCO-2015/7214.9900

Minimum Educational Qualification & Experience	5th Class with 2-3 Years of experience (should have minimum 2 years' site experience as a certified Assistant Bar Bender & Steel fixer) OR 5th Class with 5-10 Years of experience (a non-trained worker should have minimum 5 years site experience in the bar bending and steel fixing occupation)
Minimum Level of Education for Training in School	
Pre-Requisite License or Training	NIL
Minimum Job Entry Age	18 Years
Last Reviewed On	16/12/2020
Next Review Date	16/12/2025
Deactivation Date	16/12/2025
NSQC Approval Date	
Version	2.0

CON/N0204: Read and understand routine drawings / sketches and Bar Bending Schedule(BBS)

Description

This unit describes the skills and knowledge required to read and understand routine drawings/ sketches and Bar Bending Schedule(BBS)

Scope

The scope covers the following :

- Read and understand routine drawings / sketches
- Read and understand Bar Bending Schedule(BBS)

Elements and Performance Criteria

Read and understand routine drawings / sketches

To be competent, the user/individual on the job must be able to:

- PC1.** interpret basic detail like type, dimension, angle/ position of bend and layout plan from the sketches / drawings
- PC2.** interpret fixing/insertion sequence from the drawings
- PC3.** derive the orientation and position of reinforcement bars from the drawing
- PC4.** interpret drawing to calculate number of chairs and spacer bars to be used
- PC5.** find out the size and type of cover block to be used from the drawing
- PC6.** interpret basic sketches to calculate the required cutting length
- PC7.** interpret drawing/sketches for calculating scope of work and to plan for cutting, bending and fabricating of reinforcement bars

Read and understand Bar Bending Schedule

To be competent, the user/individual on the job must be able to:

- PC8.** read and interpret correct detail from bar bending schedule including type, diameter, shape, cutting length and number of reinforcement bars
- PC9.** interpret BBS to calculate the cutting length of reinforcement bars
- PC10.** interpret the terms used in bar bending schedule
- PC11.** interpret the BBS to estimate quantity of work.
- PC12.** interpret details from BBS to efficiently plan for cutting reinforcement bars with minimum wastage

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** importance of personal protection including the use of related safety gears & equipment in accordance with the organizational norms
- KU2.** service request procedure for tools, materials and equipment as per the organizational norms
- KU3.** how to read basic drawing/sketches for bar bending and fixing works
- KU4.** simple arithmetic calculation

- KU5.** how to carry out simple measurements using metric and imperial systems
- KU6.** how to read and understand BBS
- KU7.** conversion of linear unit for measurement
- KU8.** unit weight of steel
- KU9.** different types of cover block and their uses
- KU10.** different types of steel rods, length and diameter
- KU11.** different types of binding wire, thickness and uses
- KU12.** various grades of reinforcement bars

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** write in at least one language, preferably in the local language of the site
- GS2.** read drawing/sketches, work and safety-related instructions/signboards in one or more language, preferably in the local language of the site
- GS3.** speak in one or more languages, preferably one of the local language at the site
- GS4.** listen and follow instructions given by the superior
- GS5.** decide on the safety of workplace and ensure the work does not create hazardous conditions
- GS6.** plan own work and organize the required resources effectively
- GS7.** complete work as per agreed time schedule and quality parameters
- GS8.** resolve any conflict within the teammates
- GS9.** evaluate the complexity of the tasks and seek assistance and support wherever required
- GS10.** identify any violation of safety norms during the work and report the same to seniors

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Read and understand routine drawings / sketches</i>	15	35	-	-
PC1. interpret basic detail like type, dimension, angle/ position of bend and layout plan from the sketches / drawings	-	-	-	-
PC2. interpret fixing/insertion sequence from the drawings	-	-	-	-
PC3. derive the orientation and position of reinforcement bars from the drawing	-	-	-	-
PC4. interpret drawing to calculate number of chairs and spacer bars to be used	-	-	-	-
PC5. find out the size and type of cover block to be used from the drawing	-	-	-	-
PC6. interpret basic sketches to calculate the required cutting length	-	-	-	-
PC7. interpret drawing/sketches for calculating scope of work and to plan for cutting, bending and fabricating of reinforcement bars	-	-	-	-
<i>Read and understand Bar Bending Schedule</i>	15	35	-	-
PC8. read and interpret correct detail from bar bending schedule including type, diameter, shape, cutting length and number of reinforcement bars	-	-	-	-
PC9. interpret BBS to calculate the cutting length of reinforcement bars	-	-	-	-
PC10. interpret the terms used in bar bending schedule	-	-	-	-
PC11. interpret the BBS to estimate quantity of work.	-	-	-	-
PC12. interpret details from BBS to efficiently plan for cutting reinforcement bars with minimum wastage	-	-	-	-
NOS Total	30	70	-	-

National Occupational Standards (NOS) Parameters

NOS Code	CON/N0204
NOS Name	Read and understand routine drawings / sketches and Bar Bending Schedule(BBS)
Sector	Construction
Sub-Sector	Real Estate and Infrastructure construction
Occupation	Bar Bending and Fixing
NSQF Level	4
Credits	TBD
Version	2.0
Last Reviewed Date	NA
Next Review Date	NA
NSQC Clearance Date	

CON/N0205: Use hand and power tools for cutting and bending of reinforcement bars

Description

This unit describes the skills and knowledge required for using hand & power tools for cutting and bending of reinforcement bars

Scope

The scope covers the following :

- Use hand and power tools for cutting of reinforcement bars
- Use hand and power tools for bending of reinforcement bars

Elements and Performance Criteria

Use hand and power tools for cutting of reinforcement bars

To be competent, the user/individual on the job must be able to:

- PC1.** select hand /power tools for cutting reinforcement bars as per requirement / instruction
- PC2.** select cutting blade for cutting machine used for reinforcement bars as per requirement / instruction
- PC3.** use measurement and marking tool to mark reinforcement bars for cutting as per specified length mentioned in Bar Bending Schedule (BBS)
- PC4.** place reinforcement bars properly for cutting as per requirement and instruction
- PC5.** ensure the number of reinforcement bars to be cut at any given time is as per the manufacturer's guidelines
- PC6.** maintain correct body posture while cutting reinforcement bars manually or mechanically
- PC7.** tag and stack reinforcement bars after cutting as per standard practices

Use hand and power tools for bending of reinforcement bars

To be competent, the user/individual on the job must be able to:

- PC8.** select hand/power tools for bending reinforcement bars as per requirement
- PC9.** select bar bending accessories as per the diameter of reinforcement bars
- PC10.** mark, place and fix the reinforcement bars as per the position of bending
- PC11.** maintain correct body posture while bending rebars manually or mechanically
- PC12.** bend reinforcement bars as per the shape and dimensions given in the Bar Bending Schedule (BBS)
- PC13.** check to ensure that the length and shape of reinforcement bars are as per the Bar Bending Schedule (BBS) within the tolerance limit
- PC14.** tag and stack reinforcement bars after bending as per standard practices
- PC15.** use appropriate personal protective equipment and follow organizational safety guidelines while cutting and bending of reinforcement bars

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** standard practices followed for reinforcement work

- KU2.** safety rules and regulations for handling and storing required tools, equipment and materials in accordance with the organizational norms
- KU3.** use of related safety gears and equipment while cutting and bending reinforcement bars
- KU4.** organizational service request procedure for tools, materials and equipments
- KU5.** maintenance of tools and equipment
- KU6.** simple arithmetic calculation
- KU7.** conversion of linear unit for measurement
- KU8.** unit weight and grade of steel
- KU9.** types of hand tools used for cutting and bending of reinforcement bars
- KU10.** use of measurement and marking tools for reinforcement bars
- KU11.** different types of power tools and accessories used for cutting, bending and threading of reinforcement bars
- KU12.** how to fix cutting blade and other accessories to the cutting and bending machine
- KU13.** various types of cutting machines, bending machine and threading machine based on their capacity
- KU14.** use of Computer Numerical Control (CNC) machine for reinforcement works
- KU15.** methods employed for protecting steel from rusting
- KU16.** tolerance limits for bending and cutting of reinforcement bars
- KU17.** tagging procedures for reinforcement bars as per their shape, size and location
- KU18.** standard method of storing cut reinforcement bars and scrap material
- KU19.** importance of electrical safety of powers tools and equipment used in bar bending works
- KU20.** safety measures adopted while handling different type of hand and power tools used for cutting, bending and threading of reinforcement bars

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** write in at least one language, preferably in the local language of the site
- GS2.** read drawing/sketches, work and safety-related instructions/signboards in one or more language, preferably in the local language of the site
- GS3.** speak in one or more languages, preferably one of the local language at the site
- GS4.** listen and follow instructions given by the superior
- GS5.** decide on the safety of workplace and ensure the work does not create hazardous conditions
- GS6.** plan own work and organize the required resources effectively
- GS7.** complete work as per agreed time schedule and quality parameters
- GS8.** resolve any conflict within the teammates
- GS9.** evaluate the complexity of the tasks and seek assistance and support wherever required
- GS10.** identify any violation of safety norms during the work and report the same to senior

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Use hand and power tools for cutting of reinforcement bars</i>	15	35	-	-
PC1. select hand /power tools for cutting reinforcement bars as per requirement / instruction	-	-	-	-
PC2. select cutting blade for cutting machine used for reinforcement bars as per requirement / instruction	-	-	-	-
PC3. use measurement and marking tool to mark reinforcement bars for cutting as per specified length mentioned in Bar Bending Schedule (BBS)	-	-	-	-
PC4. place reinforcement bars properly for cutting as per requirement and instruction	-	-	-	-
PC5. ensure the number of reinforcement bars to be cut at any given time is as per the manufacturer's guidelines	-	-	-	-
PC6. maintain correct body posture while cutting reinforcement bars manually or mechanically	-	-	-	-
PC7. tag and stack reinforcement bars after cutting as per standard practices	-	-	-	-
<i>Use hand and power tools for bending of reinforcement bars</i>	15	35	-	-
PC8. select hand/power tools for bending reinforcement bars as per requirement	-	-	-	-
PC9. select bar bending accessories as per the diameter of reinforcement bars	-	-	-	-
PC10. mark, place and fix the reinforcement bars as per the position of bending	-	-	-	-
PC11. maintain correct body posture while bending rebars manually or mechanically	-	-	-	-
PC12. bend reinforcement bars as per the shape and dimensions given in the Bar Bending Schedule (BBS)	-	-	-	-
PC13. check to ensure that the length and shape of reinforcement bars are as per the Bar Bending Schedule (BBS) within the tolerance limit	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC14. tag and stack reinforcement bars after bending as per standard practices	-	-	-	-
PC15. use appropriate personal protective equipment and follow organizational safety guidelines while cutting and bending of reinforcement bars	-	-	-	-
NOS Total	30	70	-	-

National Occupational Standards (NOS) Parameters

NOS Code	CON/N0205
NOS Name	Use hand and power tools for cutting and bending of reinforcement bars
Sector	Construction
Sub-Sector	Real Estate and Infrastructure construction
Occupation	Bar Bending and Fixing
NSQF Level	4
Credits	TBD
Version	2.0
Last Reviewed Date	NA
Next Review Date	NA
NSQC Clearance Date	

CON/N0206: Prepare, fabricate, place and fix reinforcement bars for RCC structures

Description

This unit describes the skills and knowledge required to prepare, fabricate, place and fix reinforcement bars for RCC structures as per Bar Bending Schedule(BBS).

Scope

The scope covers the following :

- Fabricate, place and fix reinforcement bars for R.C.C structures as per Bar Bending Schedule(BBS) and drawing

Elements and Performance Criteria

Fabricate, place and fix reinforcement bars for R.C.C structures as per Bar Bending Schedule(BBS) and drawing

To be competent, the user/individual on the job must be able to:

- PC1.** interpret relevant specification given in the sketches/drawing/BBS for fabrication and fixing of reinforcement bars
- PC2.** determine correct method of insertion/ fixing of reinforcement bars as per the types of structure
- PC3.** select reinforcement bars for placement as per the drawing
- PC4.** mark, place, and fix the reinforcement bars as per sketch/drawing
- PC5.** maintain uniform spacing between the bars, stirrups and link rod as per the drawing
- PC6.** calculate the numbers of couplers for connecting of reinforcement bars as per requirement
- PC7.** stagger the lap avoiding more than 50% splicing while fabricating the reinforcement cage
- PC8.** place and fix mechanical coupler as per drawing/BBS
- PC9.** tie reinforcement bars with approved binding wires as per drawing
- PC10.** use appropriate personal protective equipment and follow organizational safety guidelines while fabricating and fixing reinforcement cage
- PC11.** ensure that the sequence of tying is as per method statement
- PC12.** fabricate the reinforcement cage and fix it at its position as per the drawing
- PC13.** place and fix chairs at specified spacing to maintain correct thickness
- PC14.** ensure cover blocks and spacers are placed to maintain appropriate covers and spacing
- PC15.** check for the accuracy of location, position and tying of reinforcement bars
- PC16.** provide suitable stiffeners for lifting in case of prefabricated cage
- PC17.** check the reinforcement work and verify it as per the drawing
- PC18.** report the executed work to the superior for quality checks
- PC19.** take corrective action in case of any error/deviation in work as per instructions
- PC20.** ensure optimum utilization and minimum wastage of material during the fabrication of reinforcement cage

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** standard practices followed for the fabrication of reinforcement cage
- KU2.** use of related safety gears & equipment for fabrication of reinforcement cage in accordance with the organizational norms
- KU3.** service request procedure for tools, materials and equipment as per the organizational norms
- KU4.** basic drawing/sketches related to reinforcement work or R.C.C structure
- KU5.** different types of reinforcement bars
- KU6.** different types and thickness of binding wire
- KU7.** different types of cover blocks available
- KU8.** basics of concreting works
- KU9.** basics of shuttering works
- KU10.** Bar Bending Schedule (BBS) related to reinforcement works
- KU11.** sequence for tying of reinforcement bars for in-situ and prefabrication works
- KU12.** insertion and fixing process of reinforcement bars for slab, beam, column, footing, wall, staircase etc.
- KU13.** concept of one way and two-way slab
- KU14.** importance of spacing of reinforcement bars
- KU15.** prefabrication of reinforcement cage and its uses in different types of structures
- KU16.** concept of lap length
- KU17.** importance of lapping of reinforcement bars in its optimum utilization
- KU18.** different types of stirrups and ties used in bar bending works
- KU19.** importance of clear cover while carrying out reinforcement works
- KU20.** use of cover blocks, chairs, spacer bar and hanger bars
- KU21.** different types of mechanical coupler based of their type, diameter and application
- KU22.** process of threading of reinforcement bar and its use
- KU23.** different types of edge protection techniques used for threaded reinforcement bars
- KU24.** standard tolerance levels in reinforcement work
- KU25.** importance of optimum utilization and minimum wastage of materials during fabrication of reinforcement cage

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** write in at least one language, preferably in the local language of the site
- GS2.** read drawing/sketches, work and safety-related instructions/signboards in one or more language, preferably in the local language of the site
- GS3.** speak in one or more languages, preferably one of the local language at the site
- GS4.** listen and follow instructions given by the superior
- GS5.** decide on the safety of workplace and ensure the work does not create hazardous conditions
- GS6.** decide on correct method for insertion/ fixing of reinforcement bars for any kind of critical structure or in congested area
- GS7.** complete work as per agreed time schedule and quality parameters
- GS8.** resolve any conflict within the teammates
- GS9.** evaluate the complexity of the tasks and seek assistance and support wherever required
- GS10.** identify any violation of safety norms during the work and report to senior

GS11. plan own work & organize the required resource effectively

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Fabricate, place and fix reinforcement bars for R.C.C structures as per Bar Bending Schedule(BBS) and drawing</i>	30	70	-	-
PC1. interpret relevant specification given in the sketches/drawing/BBS for fabrication and fixing of reinforcement bars	-	-	-	-
PC2. determine correct method of insertion/ fixing of reinforcement bars as per the types of structure	-	-	-	-
PC3. select reinforcement bars for placement as per the drawing	-	-	-	-
PC4. mark, place, and fix the reinforcement bars as per sketch/drawing	-	-	-	-
PC5. maintain uniform spacing between the bars, stirrups and link rod as per the drawing	-	-	-	-
PC6. calculate the numbers of couplers for connecting of reinforcement bars as per requirement	-	-	-	-
PC7. stagger the lap avoiding more than 50% splicing while fabricating the reinforcement cage	-	-	-	-
PC8. place and fix mechanical coupler as per drawing/BBS	-	-	-	-
PC9. tie reinforcement bars with approved binding wires as per drawing	-	-	-	-
PC10. use appropriate personal protective equipment and follow organizational safety guidelines while fabricating and fixing reinforcement cage	-	-	-	-
PC11. ensure that the sequence of tying is as per method statement	-	-	-	-
PC12. fabricate the reinforcement cage and fix it at its position as per the drawing	-	-	-	-
PC13. place and fix chairs at specified spacing to maintain correct thickness	-	-	-	-
PC14. ensure cover blocks and spacers are placed to maintain appropriate covers and spacing	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC15. check for the accuracy of location, position and tying of reinforcement bars	-	-	-	-
PC16. provide suitable stiffeners for lifting in case of prefabricated cage	-	-	-	-
PC17. check the reinforcement work and verify it as per the drawing	-	-	-	-
PC18. report the executed work to the superior for quality checks	-	-	-	-
PC19. take corrective action in case of any error/deviation in work as per instructions	-	-	-	-
PC20. ensure optimum utilization and minimum wastage of material during the fabrication of reinforcement cage	-	-	-	-
NOS Total	30	70	-	-

National Occupational Standards (NOS) Parameters

NOS Code	CON/N0206
NOS Name	Prepare, fabricate, place and fix reinforcement bars for RCC structures
Sector	Construction
Sub-Sector	Real Estate and Infrastructure construction
Occupation	Bar Bending and Fixing
NSQF Level	4
Credits	TBD
Version	2.0
Last Reviewed Date	NA
Next Review Date	NA
NSQC Clearance Date	

CON/N8001: Work effectively in a team to deliver desired results at the workplace

Description

This unit describes the skills and knowledge required to work effectively within a team to achieve the desired results

Scope

The scope covers the following :

- Interact and communicate in an effective manner
- Support co-workers to execute the project requirements
- Practice inclusion

Elements and Performance Criteria

Interact and communicate in an effective manner

To be competent, the user/individual on the job must be able to:

- PC1.** pass on work related information/ requirement clearly to the team members
- PC2.** inform co-workers and superiors about any kind of deviations from work
- PC3.** report any unresolved problem to the supervisor immediately
- PC4.** obtain instructions from superiors and respond on the same
- PC5.** communicate to team members/subordinates for appropriate work technique and method
- PC6.** seek clarification and advice as per the requirement

Support co-workers to execute the project requirements

To be competent, the user/individual on the job must be able to:

- PC7.** hand over the required material, tools, tackles, equipment and work fronts timely to interfacing teams
- PC8.** work together with co-workers in a synchronized manner

Practice inclusion

To be competent, the user/individual on the job must be able to:

- PC9.** maintain cultural inclusivity at work place
- PC10.** maintain disability friendly work practices
- PC11.** follow gender neutral practices at workplace
- PC12.** address discriminatory and offensive behaviour in a professional manner as per organizational policy

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** own roles and responsibilities
- KU2.** importance of effective communication
- KU3.** the consequence of poor teamwork on project outcomes, timelines, safety at the construction site, etc.
- KU4.** different modes of communication used at workplace

- KU5.** importance of creating healthy and cooperative work environment among the gangs of workers
- KU6.** different activities within the work area where interaction with other workers is required
- KU7.** applicable techniques of work, properties of materials used, tools and tackles used, safety standards that co-workers might need as per the requirement
- KU8.** importance of proper and effective communication and the expected adverse effects in case of failure relating to quality, timeliness, safety, risks at the construction project site
- KU9.** importance and need of supporting co-workers facing problems for the smooth functioning of work
- KU10.** the fundamental concept of gender equality
- KU11.** how to recognise and be sensitive to issues of disability, culture and gender
- KU12.** legislation, policies, and procedures relating to gender sensitivity and cultural diversity including their impact on the area of operation

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** write in at least one language, preferably in the local language of the site
- GS2.** read the communication regarding work completion, materials used, tools and tackles used, the resource required, etc,
- GS3.** speak in one or more languages, preferably in one of the local language of the site
- GS4.** listen and follow instructions / communication shared by superiors/ co-workers regarding team requirements or interfaces during work processes
- GS5.** communicate orally and effectively with co-workers considering their educational and social background
- GS6.** decide on what information is to be shared with co-workers within the team or to the interfacing gang of workers
- GS7.** plan work and organize the required resources in coordination with team members
- GS8.** complete all assigned task in coordination with team members
- GS9.** take initiative in resolving issues among co-workers or report the same to superiors
- GS10.** ensure best ways of coordination among team members
- GS11.** evaluate the complexity of task and determine if any guidance is required from superiors

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Interact and communicate in an effective manner</i>	18	42	-	-
PC1. pass on work related information/ requirement clearly to the team members	-	-	-	-
PC2. inform co-workers and superiors about any kind of deviations from work	-	-	-	-
PC3. report any unresolved problem to the supervisor immediately	-	-	-	-
PC4. obtain instructions from superiors and respond on the same	-	-	-	-
PC5. communicate to team members/subordinates for appropriate work technique and method	-	-	-	-
PC6. seek clarification and advice as per the requirement	-	-	-	-
<i>Support co-workers to execute the project requirements</i>	6	14	-	-
PC7. hand over the required material, tools, tackles, equipment and work fronts timely to interfacing teams	-	-	-	-
PC8. work together with co-workers in a synchronized manner	-	-	-	-
<i>Practice inclusion</i>	6	14	-	-
PC9. maintain cultural inclusivity at work place	-	-	-	-
PC10. maintain disability friendly work practices	-	-	-	-
PC11. follow gender neutral practices at workplace	-	-	-	-
PC12. address discriminatory and offensive behaviour in a professional manner as per organizational policy	-	-	-	-
NOS Total	30	70	-	-

National Occupational Standards (NOS) Parameters

NOS Code	CON/N8001
NOS Name	Work effectively in a team to deliver desired results at the workplace
Sector	Construction
Sub-Sector	Real Estate and Infrastructure construction
Occupation	Generic 2
NSQF Level	4
Credits	TBD
Version	6.0
Last Reviewed Date	NA
Next Review Date	NA
NSQC Clearance Date	

CON/N8002: Plan and organize work to meet expected outcomes

Description

This unit describes the knowledge and the skills required for an individual to plan and organize own work in order to meet expected outcome

Scope

The scope covers the following :

- Plan and prepare for work
- Organise required resources as per work plan
- Complete work as per the plan

Elements and Performance Criteria

Plan and prepare for work

To be competent, the user/individual on the job must be able to:

- PC1.** identify the targets and timelines set by superiors
- PC2.** determine the work requirements corresponding to task(drawings/schedules/instructions/methodology), safety, tools and equipment prior to commencement of task
- PC3.** plan the work by analyzing the required outcomes, work procedures, allotted time, resource availability and known priorities
- PC4.** prepare the work areas in coordination with team members
- PC5.** plan for waste collection and disposal prior to and after completion of work

Organise required resources as per work plan

To be competent, the user/individual on the job must be able to:

- PC6.** arrange the required manpower prior to commencement of work
- PC7.** organize the required materials, tools and tackles required for the task

Complete work as per the plan

To be competent, the user/individual on the job must be able to:

- PC8.** engage allocated manpower in an appropriate manner
- PC9.** employ correct tools, tackles and equipment for the desired work
- PC10.** provide guidance to the subordinates to obtain desired outcome
- PC11.** use resources in an optimum manner to avoid any unnecessary wastage
- PC12.** use tools, tackles and equipment carefully to avoid damage
- PC13.** ensure the work processes adopted are in line with the specified standards and instructions
- PC14.** complete the work with the allocated resources within specified time
- PC15.** clean and organise the workplace after completion of task

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** importance of proper housekeeping including safe waste disposal
- KU2.** policies, procedures and work targets set by superiors

- KU3.** how to identify work activities that need to be planned and organized
- KU4.** how to determine the task requirements
- KU5.** how to determine the quality requirements related to the task
- KU6.** how to undertake all aspect of planning and organizing the task, including interpretation of task, reading drawing/schedules, arranging resources, reporting problems etc.
- KU7.** how to implement the planned activities
- KU8.** how to use available resources in a judicious and appropriate manner to minimize wastages or damage

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** write in one or more language, preferably the local language at the site
- GS2.** read communication from co-workers, superiors and notices from other departments as per requirement of the level
- GS3.** speak in one or more language, preferably one of the local language at the site
- GS4.** follow communication shared by co-workers regarding standard work processes, resources available, timelines, etc.
- GS5.** communicate effectively with co-workers and subordinates
- GS6.** decide on what sequence is to be adopted for execution of work
- GS7.** plan and organize the materials, tools, tackles and equipment required to execute the work
- GS8.** complete all assigned task with proper planning and organizing
- GS9.** analyze areas of work which could result in a delay of work, wastage of material or damage to tools and tackles
- GS10.** evaluate potential solutions to minimize avoidable delays and wastages at the construction site

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Plan and prepare for work</i>	9	21	-	-
PC1. identify the targets and timelines set by superiors	-	-	-	-
PC2. determine the work requirements corresponding to task(drawings/schedules/instructions/methodology), safety, tools and equipment prior to commencement of task	-	-	-	-
PC3. plan the work by analyzing the required outcomes, work procedures, allotted time, resource availability and known priorities	-	-	-	-
PC4. prepare the work areas in coordination with team members	-	-	-	-
PC5. plan for waste collection and disposal prior to and after completion of work	-	-	-	-
<i>Organise required resources as per work plan</i>	6	14	-	-
PC6. arrange the required manpower prior to commencement of work	-	-	-	-
PC7. organize the required materials, tools and tackles required for the task	-	-	-	-
<i>Complete work as per the plan</i>	15	35	-	-
PC8. engage allocated manpower in an appropriate manner	-	-	-	-
PC9. employ correct tools, tackles and equipment for the desired work	-	-	-	-
PC10. provide guidance to the subordinates to obtain desired outcome	-	-	-	-
PC11. use resources in an optimum manner to avoid any unnecessary wastage	-	-	-	-
PC12. use tools, tackles and equipment carefully to avoid damage	-	-	-	-
PC13. ensure the work processes adopted are in line with the specified standards and instructions	-	-	-	-
PC14. complete the work with the allocated resources within specified time	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC15. clean and organise the workplace after completion of task	-	-	-	-
NOS Total	30	70	-	-

National Occupational Standards (NOS) Parameters

NOS Code	CON/N8002
NOS Name	Plan and organize work to meet expected outcomes
Sector	Construction
Sub-Sector	Real Estate and Infrastructure construction
Occupation	Generic 2
NSQF Level	4
Credits	TBD
Version	5.0
Last Reviewed Date	NA
Next Review Date	NA
NSQC Clearance Date	

CON/N9001: Work according to personal health, safety and environment protocols at construction site

Description

This NOS covers the skill and knowledge required for an individual to work according to personal health, safety and environmental protocols at construction site

Scope

The scope covers the following :

- Follow safety norms as defined by organization
- Adopt healthy & safe work practices
- Implement good housekeeping and environment protection process and activities
- Follow infection control guidelines as per applicability

Elements and Performance Criteria

Follow safety norms as defined by the organization

To be competent, the user/individual on the job must be able to:

- PC1.** identify and report any hazards, risks or breaches in site safety to the appropriate authority
- PC2.** follow emergency and evacuation procedures in case of accidents, fires, natural calamities
- PC3.** follow recommended safe practices in handling construction materials, including chemical and hazardous material whenever applicable
- PC4.** follow all the protocols and safety techniques conveyed during safety awareness programs like Tool Box Talks, safety demonstrations and mock drills conducted at the site
- PC5.** select and operate different types of fire extinguishers corresponding to various types of fires as per EHS guideline
- PC6.** identify near miss, unsafe condition and unsafe act

Adopt healthy & safe work practices

To be competent, the user/individual on the job must be able to:

- PC7.** use appropriate Personal Protective Equipment (PPE) as per work requirements for : Head Protection, Ear protection, Fall Protection ,Foot Protection, Face and Eye Protection, Hand and Body Protection , and Respiratory Protection (if required)
- PC8.** handle all required tools, tackles, materials and equipment safely
- PC9.** follow safe disposal of waste, harmful and hazardous materials as per EHS guidelines
- PC10.** check and install all safety equipment as per standard guidelines
- PC11.** follow safety protocols and practices as laid down by site EHS department
- PC12.** obtain "height pass" clearance for working at heights

Implement good housekeeping practices

To be competent, the user/individual on the job must be able to:

- PC13.** collect, segregate and deposit construction waste into appropriate containers based on their toxicity or hazardous nature
- PC14.** apply ergonomic principles wherever required

Follow infection control guidelines as per applicability

To be competent, the user/individual on the job must be able to:

- PC15.** follow recommended personal hygiene, workplace hygiene and sanitization practices

PC16. clean and disinfect all materials, tools and supplies before and after use

PC17. report immediately to concerned authorities regarding signs and symptoms of illness of self and others

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. reporting procedures in cases of breaches or hazards for site safety, accidents, and emergency situations as per guidelines

KU2. types of safety hazards at construction sites

KU3. basic ergonomic principles as per applicability

KU4. the procedure for responding to accidents and other emergencies at site

KU5. use of appropriate personal protective equipment based on various working conditions

KU6. importance of handling tools, equipment, and materials as per applicable norms

KU7. effect of construction material on health and environments as per applicability

KU8. various environmental protection methods as per applicability

KU9. storage of waste including non-combustible scrap material and debris, combustible scrap material and debris, general construction waste and trash (non-toxic, non-hazardous), any other hazardous wastes and any other flammable wastes at the appropriate location

KU10. how to keep the workplace neat and tidy so as to be safe

KU11. how to use hazardous material in a safe and appropriate manner as per applicability

KU12. types of fire

KU13. procedure of operating different types of fire extinguishers

KU14. safety relevant to tools, tackles, and equipment as per applicability

KU15. housekeeping activities relevant to task

KU16. ways of transmission of infection

KU17. ways to manage infectious risks at the workplace

KU18. different methods of cleaning, disinfection, sterilization, and sanitization

KU19. symptoms of infection like fever, cough, redness, swelling, and inflammation

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. write in at least one language, preferably in the local language of the site

GS2. fill safety formats for near miss, unsafe conditions and safety suggestions

GS3. read in one or more language, preferably in the local language of the site

GS4. speak in one or more language, preferably in one of the local language of the site

GS5. listen to instructions/communication shared by site EHS and superiors regarding site safety, and conducting the toolbox talk

GS6. identify potential safety risks and report to the appropriate authority

GS7. assess and analyze areas which may affect health, safety and environment protocol on the site

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Follow safety norms as defined by the organization</i>	6	14	-	-
PC1. identify and report any hazards, risks or breaches in site safety to the appropriate authority	-	-	-	-
PC2. follow emergency and evacuation procedures in case of accidents, fires, natural calamities	-	-	-	-
PC3. follow recommended safe practices in handling construction materials, including chemical and hazardous material whenever applicable	-	-	-	-
PC4. follow all the protocols and safety techniques conveyed during safety awareness programs like Tool Box Talks, safety demonstrations and mock drills conducted at the site	-	-	-	-
PC5. select and operate different types of fire extinguishers corresponding to various types of fires as per EHS guideline	-	-	-	-
PC6. identify near miss, unsafe condition and unsafe act	-	-	-	-
<i>Adopt healthy & safe work practices</i>	15	35	-	-
PC7. use appropriate Personal Protective Equipment (PPE) as per work requirements for : Head Protection, Ear protection, Fall Protection ,Foot Protection, Face and Eye Protection, Hand and Body Protection , and Respiratory Protection (if required)	-	-	-	-
PC8. handle all required tools, tackles, materials and equipment safely	-	-	-	-
PC9. follow safe disposal of waste, harmful and hazardous materials as per EHS guidelines	-	-	-	-
PC10. check and install all safety equipment as per standard guidelines	-	-	-	-
PC11. follow safety protocols and practices as laid down by site EHS department	-	-	-	-
PC12. obtain "height pass" clearance for working at heights	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Implement good housekeeping practices</i>	6	14	-	-
PC13. collect, segregate and deposit construction waste into appropriate containers based on their toxicity or hazardous nature	-	-	-	-
PC14. apply ergonomic principles wherever required	-	-	-	-
<i>Follow infection control guidelines as per applicability</i>	3	7	-	-
PC15. follow recommended personal hygiene, workplace hygiene and sanitization practices	-	-	-	-
PC16. clean and disinfect all materials, tools and supplies before and after use	-	-	-	-
PC17. report immediately to concerned authorities regarding signs and symptoms of illness of self and others	-	-	-	-
NOS Total	30	70	-	-

National Occupational Standards (NOS) Parameters

NOS Code	CON/N9001
NOS Name	Work according to personal health, safety and environment protocols at construction site
Sector	Construction
Sub-Sector	Real Estate and Infrastructure construction
Occupation	Generic Safety
NSQF Level	4
Credits	TBD
Version	6.0
Last Reviewed Date	NA
Next Review Date	NA
NSQC Clearance Date	

Assessment Guidelines and Assessment Weightage

Assessment Guidelines

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC)/ Elements will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC/ Elements.
2. The assessment for the knowledge part will be based on knowledge bank of questions created by Assessment Bodies subject to approval by SSC
3. Individual assessment agencies will create unique question papers for knowledge/theory part for assessment of candidates as per assessment criteria given below
4. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on assessment criteria.
5. The passing percentage for each QP will be 70%. To pass the Qualification Pack, every trainee should score a minimum of 70% individually in each NOS.
6. The Assessor shall check the final outcome of the practices while evaluating the steps performed to achieve the final outcome.
7. The trainee shall be provided with a chance to repeat the test to correct his procedures in case of improper performance, with a deduction of marks for each iteration.
8. After the certain number of iterations as decided by SSC the trainee is marked as fail, scoring zero marks for the procedure for the practical activity.
9. In case of successfully passing only certain number of NOS's, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack within the specified time frame set by SSC.
10. Minimum duration of Assessment of each QP shall be of 4hrs/trainee.

Minimum Aggregate Passing % at QP Level : 70

(Please note: Every Trainee should score a minimum aggregate passing percentage as specified above, to successfully clear the Qualification Pack assessment.)

Minimum Passing % at NOS Level: 70

(Please note: A Trainee must score the minimum percentage for each NOS separately as well as on the QP as a whole.)

Assessment Weightage

Compulsory NOS

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
CON/N0204.Read and understand routine drawings / sketches and Bar Bending Schedule(BBS)	30	70	0	0	100	25
CON/N0205.Use hand and power tools for cutting and bending of reinforcement	30	70	-	-	100	25
CON/N0206.Prepare, fabricate, place and fix reinforcement bars for RCC structures	30	70	0	0	100	25
CON/N8001.Work effectively in a team to deliver desired results at the workplace	30	70	0	0	100	8
CON/N8002.Plan and organize work to meet expected outcomes	30	70	-	-	100	7
CON/N9001.Work according to personal health, safety and environment protocols at construction site	30	70	-	-	100	10
Total	180	420	-	-	600	100

Acronyms

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training

Glossary

Sector	Sector is a conglomeration of different business operations having similar business and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.
Sub-sector	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
Occupation	Occupation is a set of job roles, which perform similar/ related set of functions in an industry.
Job role	Job role defines a unique set of functions that together form a unique employment opportunity in an organisation.
Occupational Standards (OS)	OS specify the standards of performance an individual must achieve when carrying out a function in the workplace, together with the Knowledge and Understanding (KU) they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria (PC)	Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task.
National Occupational Standards (NOS)	NOS are occupational standards which apply uniquely in the Indian context.
Qualifications Pack (QP)	QP comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A QP is assigned a unique qualifications pack code.
Unit Code	Unit code is a unique identifier for an Occupational Standard, which is denoted by an 'N'
Unit Title	Unit title gives a clear overall statement about what the incumbent should be able to do.
Description	Description gives a short summary of the unit content. This would be helpful to anyone searching on a database to verify that this is the appropriate OS they are looking for.
Scope	Scope is a set of statements specifying the range of variables that an individual may have to deal with in carrying out the function which have a critical impact on quality of performance required.
Knowledge and Understanding (KU)	Knowledge and Understanding (KU) are statements which together specify the technical, generic, professional and organisational specific knowledge that an individual needs in order to perform to the required standard.
Organisational Context	Organisational context includes the way the organisation is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.

Technical Knowledge	Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Core Skills/ Generic Skills (GS)	Core skills or Generic Skills (GS) are a group of skills that are the key to learning and working in today's world. These skills are typically needed in any work environment in today's world. These skills are typically needed in any work environment. In the context of the OS, these include communication related skills that are applicable to most job roles.
Electives	Electives are NOS/set of NOS that are identified by the sector as contributive to specialization in a job role. There may be multiple electives within a QP for each specialized job role. Trainees must select at least one elective for the successful completion of a QP with Electives.
Options	Options are NOS/set of NOS that are identified by the sector as additional skills. There may be multiple options within a QP. It is not mandatory to select any of the options to complete a QP with Options.