



Qualification Pack



Reinforcement Fitter

QP Code: CON/Q0204

Version: 2.0

NSQF Level: 4

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CON/Q0204: Reinforcement Fitter

Brief Job Description

Reinforcement Fitter is responsible for fabricating and fixing reinforcement bars for complex structures such as arches, domes, and other circular structures in a sequential manner as per work requirement within specified time and tolerance. The individual also works with mechanical couplers for extension of reinforcement bars.

Personal Attributes

The reinforcement fitter is 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/N0207: Fabricate and fix reinforcement bars for complex structures as per drawings, Bar Bending Schedule \(BBS\) and standard code provision](#)
- [2. CON/N0208: Install mechanical couplers for reinforcement works](#)
- [3. CON/N8001: Work effectively in a team to deliver desired results at the workplace](#)
- [4. CON/N8002: Plan and organize work to meet expected outcomes](#)
- [5. 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
Credits	NA



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Aligned to NCO/ISCO/ISIC Code	NCO-2015/7214.9900
Minimum Educational Qualification & Experience	8th Class (with ITI (2 years)) with 2 Years of experience in same occupation OR 10th Class with 2 Years of experience in same occupation OR Certificate-NSQF (level 3) with 2 Years of experience in same occupation
Minimum Level of Education for Training in School	
Pre-Requisite License or Training	NIL
Minimum Job Entry Age	18 Years
Last Reviewed On	31/03/2022
Next Review Date	31/03/2025
NSQC Approval Date	31/03/2022
Version	2.0
Reference code on NQR	2022/CON/CSDCI/05606
NQR Version	1.0



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CON/N0207: Fabricate and fix reinforcement bars for complex structures as per drawings, Bar Bending Schedule (BBS) and standard code provision

Description

This unit describes the skills and knowledge required to perform fabrication and fixing of reinforcement bars for complex structures as per drawings, Bar Bending Schedule (BBS), and standard code provision.

Scope

The scope covers the following :

- Interpret drawing & bar bending schedule
- Cut and bend reinforcement bars as per bar bending schedule (BBS)
- Direct the teammates for the fabrication and fixing of reinforcement bars for complex structures (Arches, Domes, and other circular structures) as per bar bending schedule and drawings
- Check the quality of reinforcement work ensuring minimum wastage and optimum utilization

Elements and Performance Criteria

Interpret drawings and bar bending schedule (BBS)

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

- PC1.** interpret details such as type, dimension, layout plan and other reinforcement details from the drawings
- PC2.** co-relate general arrangement drawing with reinforcement drawing
- PC3.** interpret the terms used in drawing and Bar bending Schedule(BBS)
- PC4.** interpret details such as description of reinforcement bar, diameter, shape, spacing, cutting length, and number of reinforcement bars from BBS
- PC5.** interpret BBS/ drawings to calculate the cutting length of reinforcement bar

Cut and bend reinforcement bars as per bar bending schedule (BBS)

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

- PC6.** ensure that only approved BBS is used for execution of reinforcement work
- PC7.** use appropriate personal protective equipment and follow organizational safety guidelines while cutting and bending of reinforcement bars
- PC8.** ensure accurate marking on the reinforcement bars for cutting as per the cutting length provided in the BBS
- PC9.** bend the reinforcement bars using bending machines/tools as per the approved drawings/ bar bending schedule (BBS)
- PC10.** ensure the prepared reinforcement bars are bundled, tagged, numbered and stacked appropriately prior to delivery to the required location
- PC11.** ensure completion of assigned work within allocated time as per desired quality parameters

Direct the teammates for fabrication and fixing of reinforcement bars for complex structures (Arches, Domes and other circular structures) as per bar bending schedule and drawings



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

- PC12.** determine the relevant placing sequence of reinforcement bars including insertion and fixing of conduits, sleeves, anchors etc. from the drawing
- PC13.** ensure the subordinates follow correct method for insertion/ fixing of rebars as per the types of structure
- PC14.** mark, place and fix reinforcement bars and fabricated cages at its required position
- PC15.** maintain specified spacing between bars and stirrups as per the drawing/BBS
- PC16.** install hooks, splices, insert plates, bar supports (spacer, chairs), shear studs, cover blocks etc. as per drawings and specifications
- PC17.** fix reinforcement bars in complex structures like arches, domes, etc. using cover blocks, spacers and templates
- PC18.** fabricate and fix prefabricated cages as per site requirement and drawings
- PC19.** fasten embedded items securely in proper position before placing of the concrete
- PC20.** complete steel fixing as per approved drawing and BBS within stipulated time
- PC21.** ensure optimum utilization and minimum wastage of material during the fabrication of reinforcement cage for complex structures

Check quality of reinforcement work ensuring minimum wastage and optimum utilization

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

- PC22.** check for required bend and cutting length before/after fabrication & placing of reinforcement bars
- PC23.** conduct visual checks to ascertain the quality and length of binding wire used for tying of reinforcement bars
- PC24.** check accuracy of reinforcement work with reference to spacing and placement of reinforcement bars
- PC25.** ensure proper splicing/lapping of reinforcement bars avoiding more than 50% of splicing/ lapping at a location
- PC26.** ensure uniform spacing between the bars and stirrups as per BBS drawing
- PC27.** check that correct type of ties are used for tying of reinforcement bars
- PC28.** ensure the location and installation of insert plates and shear studs (if any) is as per drawing

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 relevant tools, equipment, and materials for reinforcement work in accordance with organizational norms
- KU3.** personal protection including the use of related safety gears & equipment in accordance with organizational norms
- KU4.** service request procedures for tools, materials and equipment as per organizational norms
- KU5.** how to read and interpret reinforcement drawing/sketches
- KU6.** how to read and interpret details from bar bending schedule



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- KU7.** units of measurements including their conversion
- KU8.** arithmetic and basic geometric calculations
- KU9.** use of power tools and its accessories for cutting and bending of reinforcement bars
- KU10.** use of automatic bar tying machine and its accessories
- KU11.** use of different types of hand tools such as binding hooks, bending lever of different size, hammer
- KU12.** unit weight of reinforcement bars of different diameter
- KU13.** sequence of insertion and fixing of reinforcement bars for different types of structural elements
- KU14.** basics of bar positioning in complex reinforcement work
- KU15.** electrical safety of power tools and equipment used in bar bending works
- KU16.** different types of stirrups and ties
- KU17.** importance of hook length, bend length, lap length, development length and crank length
- KU18.** different types of binding wire, and their cutting length for different purposes

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 languages, preferably in the local language of the site
- GS3.** speak in one or more languages, preferably one of the local languages at the site for providing instructions to subordinates and reporting to seniors.
- GS4.** listen attentively to the instructions given by the superiors
- GS5.** decide on the safety of the workplace and ensure the work does not create hazardous conditions
- GS6.** plan work and organize 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 task and seek assistance and support wherever required
- GS10.** identify any violation of safety norms during the work and report the same to seniors



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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Interpret drawings and bar bending schedule (BBS)</i>	6	14	-	-
PC1. interpret details such as type, dimension, layout plan and other reinforcement details from the drawings	-	-	-	-
PC2. co-relate general arrangement drawing with reinforcement drawing	-	-	-	-
PC3. interpret the terms used in drawing and Bar bending Schedule(BBS)	-	-	-	-
PC4. interpret details such as description of reinforcement bar, diameter, shape, spacing, cutting length, and number of reinforcement bars from BBS	-	-	-	-
PC5. interpret BBS/ drawings to calculate the cutting length of reinforcement bar	-	-	-	-
<i>Cut and bend reinforcement bars as per bar bending schedule (BBS)</i>	6	14	-	-
PC6. ensure that only approved BBS is used for execution of reinforcement work	-	-	-	-
PC7. use appropriate personal protective equipment and follow organizational safety guidelines while cutting and bending of reinforcement bars	-	-	-	-
PC8. ensure accurate marking on the reinforcement bars for cutting as per the cutting length provided in the BBS	-	-	-	-
PC9. bend the reinforcement bars using bending machines/tools as per the approved drawings/ bar bending schedule (BBS)	-	-	-	-
PC10. ensure the prepared reinforcement bars are bundled, tagged, numbered and stacked appropriately prior to delivery to the required location	-	-	-	-
PC11. ensure completion of assigned work within allocated time as per desired quality parameters	-	-	-	-



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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Direct the teammates for fabrication and fixing of reinforcement bars for complex structures (Arches, Domes and other circular structures) as per bar bending schedule and drawings</i>	12	28	-	-
PC12. determine the relevant placing sequence of reinforcement bars including insertion and fixing of conduits, sleeves ,anchors etc. from the drawing	-	-	-	-
PC13. ensure the subordinates follow correct method for insertion/ fixing of rebars as per the types of structure	-	-	-	-
PC14. mark ,place and fix reinforcement bars and fabricated cages at its required position	-	-	-	-
PC15. maintain specified spacing between bars and stirrups as per the drawing/BBS	-	-	-	-
PC16. install hooks, splices, insert plates, bar supports (spacer, chairs), shear studs, cover blocks etc. as per drawings and specifications	-	-	-	-
PC17. fix reinforcement bars in complex structures like arches, domes, etc. using cover blocks, spacers and templates	-	-	-	-
PC18. fabricate and fix prefabricated cages as per site requirement and drawings	-	-	-	-
PC19. fasten embedded items securely in proper position before placing of the concrete	-	-	-	-
PC20. complete steel fixing as per approved drawing and BBS within stipulated time	-	-	-	-
PC21. ensure optimum utilization and minimum wastage of material during the fabrication of reinforcement cage for complex structures	-	-	-	-
<i>Check quality of reinforcement work ensuring minimum wastage and optimum utilization</i>	6	14	-	-
PC22. check for required bend and cutting length before/after fabrication & placing of reinforcement bars	-	-	-	-



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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC23. conduct visual checks to ascertain the quality and length of binding wire used for tying of reinforcement bars	-	-	-	-
PC24. check accuracy of reinforcement work with reference to spacing and placement of reinforcement bars	-	-	-	-
PC25. ensure proper splicing/lapping of reinforcement bars avoiding more than 50% of splicing/ lapping at a location	-	-	-	-
PC26. ensure uniform spacing between the bars and stirrups as per BBS drawing	-	-	-	-
PC27. check that correct type of ties are used for tying of reinforcement bars	-	-	-	-
PC28. ensure the location and installation of insert plates and shear studs (if any) is as per drawing	-	-	-	-
NOS Total	30	70	-	-



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National Occupational Standards (NOS) Parameters

NOS Code	CON/N0207
NOS Name	Fabricate and fix reinforcement bars for complex structures as per drawings, Bar Bending Schedule (BBS) and standard code provision
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	31/03/2022
Next Review Date	31/03/2025
NSQC Clearance Date	31/03/2022



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CON/N0208: Install mechanical couplers for reinforcement works

Description

This unit describes the skills and knowledge required to install mechanical couplers for reinforcement works

Scope

The scope covers the following :

- Prepare for the installation of mechanical couplers used in the joining of reinforcement bars.
- Install mechanical / reinforcement couplers

Elements and Performance Criteria

Prepare for installation of mechanical couplers used in the joining of reinforcement bars

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

- PC1.** check that reinforcement bars and their ends have been cut properly to appropriate length as per specifications/drawings
- PC2.** ensure poorly sheared ends of reinforcement bar are cut off/cold forged prior to installation of mechanical coupler
- PC3.** check that reinforcement bars are threaded properly using threading machine and are covered with plastic thread protector
- PC4.** select mechanical couplers based on diameter of reinforcement bars, color code requirement and manufacturer's specification

Install mechanical / reinforcement couplers

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

- PC5.** use appropriate personal protective equipment and follow organizational safety guidelines while cutting and bending of reinforcement bars
- PC6.** position the cast and continuation bar and fix them appropriately to the coupler
- PC7.** tighten the connections by hand or by using appropriate torque wrench
- PC8.** screw and fit the bars to the appropriate ends of the couplers as per manufacturer's instructions
- PC9.** use different types of couplers such as threaded coupler, taper threaded coupler, grout filled coupler, combo grout filled/threaded filled coupler etc. appropriately
- PC10.** ensure that procedure adopted for fixing mechanical couplers is as per colour codes and manufacturer's specifications

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** standard practices followed for reinforcement work



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- 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 installing mechanical couplers
- KU4.** organizational service request procedure for tools, materials and equipments
- KU5.** how to read and interpret schematic drawings, sketches and BBS
- KU6.** importance and use of mechanical coupler
- KU7.** manufacturer's instruction/specifications for installing mechanical couplers
- KU8.** use of power tools for threading of reinforcement bars
- KU9.** potential mechanical hazards while threading of reinforcement bars and fixing of mechanical couplers
- KU10.** different types of mechanical couplers, their application and suitability
- KU11.** the standard procedure followed for fixing of mechanical couplers
- KU12.** maintenance and protection of mechanical connections
- KU13.** types of tools and grout materials used for fixing mechanical couplers
- KU14.** lap length of reinforcement bar for different diameter and alternate use of mechanical coupler

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 attentively to the instructions given by the superiors
- GS5.** decide on the safety of the workplace and ensure the work does not create hazardous conditions
- GS6.** plan work & organize required resource effectively
- GS7.** complete work as per agreed time schedule and quality
- GS8.** resolve any conflict within the teammates
- GS9.** evaluate the complexity of the task and seek assistance and support wherever required
- GS10.** identify any violation of safety norms during the work and report the same to seniors



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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Prepare for installation of mechanical couplers used in the joining of reinforcement bars</i>	8	17	-	-
PC1. check that reinforcement bars and their ends have been cut properly to appropriate length as per specifications/drawings	-	-	-	-
PC2. ensure poorly sheared ends of reinforcement bar are cut off/cold forged prior to installation of mechanical coupler	-	-	-	-
PC3. check that reinforcement bars are threaded properly using threading machine and are covered with plastic thread protector	-	-	-	-
PC4. select mechanical couplers based on diameter of reinforcement bars, color code requirement and manufacturer's specification	-	-	-	-
<i>Install mechanical / reinforcement couplers</i>	22	53	-	-
PC5. use appropriate personal protective equipment and follow organizational safety guidelines while cutting and bending of reinforcement bars	-	-	-	-
PC6. position the cast and continuation bar and fix them appropriately to the coupler	-	-	-	-
PC7. tighten the connections by hand or by using appropriate torque wrench	-	-	-	-
PC8. screw and fit the bars to the appropriate ends of the couplers as per manufacturer's instructions	-	-	-	-
PC9. use different types of couplers such as threaded coupler, taper threaded coupler, grout filled coupler, combo grout filled/threaded filled coupler etc. appropriately	-	-	-	-
PC10. ensure that procedure adopted for fixing mechanical couplers is as per colour codes and manufacturer's specifications	-	-	-	-
NOS Total	30	70	-	-



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National Occupational Standards (NOS) Parameters

NOS Code	CON/N0208
NOS Name	Install mechanical couplers for reinforcement works
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	31/03/2022
Next Review Date	31/03/2025
NSQC Clearance Date	31/03/2022



Qualification Pack

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



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- 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



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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	-	-



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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	31/03/2022
Next Review Date	31/03/2025
NSQC Clearance Date	31/03/2022



Qualification Pack

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)



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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



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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	-	-	-	-



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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC14. complete the work with the allocated resources within specified time	-	-	-	-
PC15. clean and organise the workplace after completion of task	-	-	-	-
NOS Total	30	70	-	-



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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	31/03/2022
Next Review Date	31/03/2025
NSQC Clearance Date	31/03/2022



Qualification Pack

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



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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



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- 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



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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	-	-	-	-



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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC11. follow safety protocols and practices as laid down by site EHS department	-	-	-	-
PC12. obtain "height pass" clearance for working at heights	-	-	-	-
<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	-	-



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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	31/03/2022
Next Review Date	31/03/2025
NSQC Clearance Date	31/03/2022

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.



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- 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.
- 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.
- 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.
- 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/N0207.Fabricate and fix reinforcement for complex structures as per drawings, BBS and standard codes provision	30	70	-	-	100	45
CON/N0208.Instruct, place and fix mechanical couplers for reinforcement works	30	70	-	-	100	30
CON/N8001.Work effectively in a team to deliver desired results at the workplace	30	70	-	-	100	5
CON/N8002.Plan and organize work to meet expected outcomes	30	70	-	-	100	5



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National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
CON/N9001.Work according to personal health, safety and environment protocols at construction site	30	70	-	-	100	15
Total	150	350	-	-	500	100



Qualification Pack

Acronyms

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



Qualification Pack

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.



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Knowledge and Understanding (KU)	<p>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.</p>
Organisational Context	<p>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.</p>
Technical Knowledge	<p>Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.</p>
Core Skills/ Generic Skills (GS)	<p>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.</p>
Electives	<p>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.</p>
Options	<p>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.</p>