



Foreman Reinforcement

QP Code: CON/Q0205

Version: 1.0

NSQF Level: 5

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CON/Q0205: Foreman Reinforcement

Brief Job Description

Foreman - Reinforcement is responsible for reading and interpreting drawings, calculate quantity of material required for reinforcement work, arrange and allocate resources, instruct proper sequence of work, ensure execution of work as per plans, specifications and working drawings. The individual should possess sound technical knowledge, should be able to monitor and maintain safe and quality working practices.

Personal Attributes

This job role requires the individual to be physically and mentally strong enough to oversee the reinforcement work at a construction site. The individual should be having strong organizational, interpersonal and communication skills, along with comprehensive technical knowledge of reinforcement work and ability to supervise construction crew.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. [CON/N0210: Read drawings, specification, standards and prepare Bar Bending Schedule](#)
2. [CON/N0211: Monitor reinforcement works at reinforcement yard](#)
3. [CON/N0212: Ensure fabrication, placing and fixing of rebars as per drawing, bar bending schedule and specification](#)
4. [CON/N0213: Inspect and check the quality of reinforcement work](#)
5. [CON/N7001: Plan, arrange and manage resources for execution of relevant work](#)
6. [CON/N8001: Work effectively in a team to deliver desired results at the workplace](#)
7. [CON/N8002: Plan and organize work to meet expected outcomes](#)
8. [CON/N8003: Supervise, monitor and evaluate performance of subordinates at workplace](#)
9. [CON/N9002: Manage workplace for safe and healthy work environment](#)

Qualification Pack (QP) Parameters

Sector	Construction
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Qualification Pack



Sub-Sector	Real Estate and Infrastructure construction
Occupation	Bar Bending and Fixing
Country	India
NSQF Level	5
Credits	NA
Aligned to NCO/ISCO/ISIC Code	NCO-2004/3112.90
Minimum Educational Qualification & Experience	10th Class with 3-5 Years of experience as a certified Reinforcement Fitter OR 10th Class with 10-15 Years of experience in case of a Non trained worker, in same occupation
Minimum Level of Education for Training in School	
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 Years
Last Reviewed On	23/03/2015
Next Review Date	31/03/2022
Deactivation Date	31/03/2022
NSQC Approval Date	19/05/2015
Version	1.0
Reference code on NQR	2015/CON/CSDCI/00065
NQR Version	1.0



CON/N0210: Read drawings, specification, standards and prepare Bar Bending Schedule

Description

This unit describes the skills and knowledge required to read drawings specification, standards and prepare Bar Bending schedule

Scope

The scope covers the following:

- Read & interpret drawings, BBS , specifications and standards for bar bending and steel fixing operations
- Prepare Bar Bending Schedule

Elements and Performance Criteria

Read & interpret drawings, BBS , specifications and standards for bar bending and steel fixing operations

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

- PC1.** read & interpret details from R.C.C drawing and other relevant drawings
- PC2.** read & interpret details from Bar bending schedule
- PC3.** read and understand specification and standards provided for fabrication and fixing of reinforcement
- PC4.** read and understand all specification provided in the relevant drawing
- PC5.** read and understand schedule provided for completion of reinforcement work
- PC6.** read method statement for execution of reinforcement work
- PC7.** read, understand & follow manufactures specification for fixing of mechanical coupler
- PC8.** read, understand & follow manufactures specification for operation of power tools and CNC machine for cutting and bending
- PC9.** carryout calculation of BOQ quantity

Prepare Bar Bending Schedule

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

- PC10.** read & co-relate R.C.C detail drawing with respect to general arrangement drawing
- PC11.** prepare the BBS for cutting and bending of rebars and plan fixing of reinforcement
- PC12.** ensure BBS includes all specifications of rebars for R.C.C work including diameter, shape, cutting length, number, length of each bent and straight portion, angle, and description of rebars
- PC13.** prepare schedules from given part of BBS, interpreting codes and key shapes
- PC14.** ensure that prepared BBS is checked and approved by respective engineer in charge

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:



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- KU1.** standard practices for reinforcement work
- KU2.** safety rules and regulations for handling and storing relevant tools, equipment and materials for reinforcement works
- KU3.** personal protection including the use of related safety gears & equipments
- KU4.** service request procedures for tools, materials and equipments
- KU5.** statutory compliance requirement related to workmen engagement
- KU6.** reading and understanding of civil structural drawings
- KU7.** principles involved in reading and understanding various related drawings
- KU8.** use of schedules including applicable code shapes and associated calculations
- KU9.** reading of general arrangement drawing
- KU10.** reading of RCC detail drawing
- KU11.** correlation of drawings
- KU12.** implementation of BBS
- KU13.** knowledge of basic IS/International Codes for Reinforcement
- KU14.** simplified sketch preparation from the drawing
- KU15.** how to read plan, elevation and sectional drawing
- KU16.** basic principal of measurement, arithmetic and geometric calculations
- KU17.** terminology used in reinforcement works
- KU18.** linear conversion of units
- KU19.** units of measurement
- KU20.** components, materials and tools used in reinforcement works
- KU21.** insertion and fixing procedure for various types of structure
- KU22.** units weight of reinforcement steel of different diamete
- KU23.** electrical safety of power tools for reinforcement works
- KU24.** computer basics, auto-cad software application for 2D drawings

Generic Skills (GS)

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

- GS1.** write at least two language, preferably the local language at the site and basic English
- GS2.** provide clear and simple instructions, details & sketches to sub-ordinate
- GS3.** record and document daily productivity report, daily labour attendance & details regarding work done
- GS4.** prepare basic status updates for the superiors in the prescribed format
- GS5.** read one or more language, preferably the local language at the site
- GS6.** read drawing, reinforcement specification and standards
- GS7.** read key documents including quality standards, standards working methods& applicable tolerance limits
- GS8.** read manufacturer instruction and specification for using power tools for reinforcement works



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- GS9.** read various, sign boards, safety rules and safety tags , instruction related to exit routes during emergency at the workplace
- GS10.** speak in one or more language, preferably one of the local language at site
- GS11.** listen and follow instructions clearly given by the superior
- GS12.** provide clear instructions to subordinates for task as per work plan, time schedule and quality
- GS13.** estimate required material and resources for work
- GS14.** decide on insertion and fixing of rebars
- GS15.** plan work & organize required resource in coordination with team members and superiors
- GS16.** plan work targets, allocate time schedule to subordinates and organize complete of task within allocated time
- GS17.** ensure completion of work as per agreed time schedule and quality
- GS18.** resolve any conflict within the team
- GS19.** resolve / clarify and clear works pending due to any hindrances
- GS20.** assess quantity of resources required for day work
- GS21.** optimize resources
- GS22.** minimize wastages
- GS23.** assess complexity of the tasks, provide guidance, demonstrate corrective action as per requirement
- GS24.** identify and assess how violation of any safety norms may lead to accidents
- GS25.** correlate the sequence of fixing reinforcement with inserts, cast in fixings etc.



Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Read & interpret drawings, BBS , specifications and standards for bar bending and steel fixing operations</i>	20	30	-	-
PC1. read & interpret details from R.C.C drawing and other relevant drawings	2	3	-	-
PC2. read & interpret details from Bar bending schedule	3	4.5	-	-
PC3. read and understand specification and standards provided for fabrication and fixing of reinforcement	2	3	-	-
PC4. read and understand all specification provided in the relevant drawing	2	3	-	-
PC5. read and understand schedule provided for completion of reinforcement work	2	3	-	-
PC6. read method statement for execution of reinforcement work	2	3	-	-
PC7. read, understand & follow manufactures specification for fixing of mechanical coupler	2	3	-	-
PC8. read, understand & follow manufactures specification for operation of power tools and CNC machine for cutting and bending	2	3	-	-
PC9. carryout calculation of BOQ quantity	3	4.5	-	-
<i>Prepare Bar Bending Schedule</i>	20	30	-	-
PC10. read & co-relate R.C.C detail drawing with respect to general arrangement drawing	3	4.5	-	-
PC11. prepare the BBS for cutting and bending of rebars and plan fixing of reinforcement	5	7.5	-	-
PC12. ensure BBS includes all specifications of rebars for R.C.C work including diameter, shape, cutting length, number, length of each bent and straight portion, angle, and description of rebars	5	7.5	-	-



Qualification Pack



Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. prepare schedules from given part of BBS, interpreting codes and key shapes	3	4.5	-	-
PC14. ensure that prepared BBS is checked and approved by respective engineer in charge	4	6	-	-
NOS Total	40	60	-	-



Qualification Pack



National Occupational Standards (NOS) Parameters

NOS Code	CON/N0210
NOS Name	Read drawings, specification, standards and prepare Bar Bending Schedule
Sector	Construction
Sub-Sector	Real Estate and Infrastructure construction
Occupation	Bar Bending and Fixing
NSQF Level	5
Credits	TBD
Version	1.0
Last Reviewed Date	23/03/2015
Next Review Date	31/03/2022
NSQC Clearance Date	19/05/2015



CON/N0211: Monitor reinforcement works at reinforcement yard

Description

This unit describes the knowledge and the skills required to carry out monitoring works at reinforcement yard

Scope

The scope covers the following:

- Carry out reinforcement and related monitoring works at reinforcement yard

Elements and Performance Criteria

Carry out reinforcement and related monitoring works at reinforcement yard

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

- PC1.** inspect incoming / outgoing material at reinforcement yard
- PC2.** carry out weighing of steel reinforcement before unloading at site in coordination with the stores
- PC3.** visually check for quality of reinforcement steel against rusting
- PC4.** ensure appropriate protection measures rebars
- PC5.** ensure standard practices for storing and stacking of reinforcement steel at the yard
- PC6.** monitor all rebars cutting and bending activity at yard
- PC7.** monitor threading activity ensure protection of threaded end part with plastic caps
- PC8.** understand manufacturer specification/instruction for use of CNC machine
- PC9.** understand manufacturer specification/instruction for use of power tools for cutting and bending
- PC10.** perform basic troubleshooting for operation of CNC machine
- PC11.** ensure bundling/tagging and stacking of cut & bent bars as per bar marking the BBS
- PC12.** ensure to prevent distortion of fabricated bars during handling
- PC13.** ensure proper use of slings, belts, hook for lifting of rebars using crane
- PC14.** ensure maximum use of cut length & minimise wastage
- PC15.** segregate prime length of steel rods based on diameter of bar
- PC16.** coordinate with seniors and stores, to ensure smooth operations of work at reinforcement yard
- PC17.** coordinate with site to meet demand requirement at site on priority basis

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** standard practices for reinforcement work



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- KU2.** safety rules and regulations for handling and storing relevant tools, equipment and materials for reinforcement works
- KU3.** personal protection including the use of related safety gears & equipments
- KU4.** service request procedures for tools, materials and equipments
- KU5.** statutory compliance requirement related to workmen engagement
- KU6.** standard procedures for stacking of reinforcement
- KU7.** basic knowledge of various types of steel such as Mild Steel , TOR steel & TMT steel
- KU8.** method to prevent reinforcement against rusting, and weathering effect
- KU9.** bundling and tagging of rebars
- KU10.** visual quality check for reinforcement
- KU11.** segregation of reinforcement on basis of cutting length and dia to minimize wastage
- KU12.** safety rules and regulations at site
- KU13.** use of PPE during operations of power tools /CNC machines
- KU14.** service request procedures for tools, materials, equipment
- KU15.** schematic drawings, sketches and BBS
- KU16.** how to operate hand tools, power tools, CNC machine for their respective applications in reinforcement work
- KU17.** types of mechanical couplers and manufacturers instructions for their installations
- KU18.** shapes and codes provided in the BBS
- KU19.** computer basics auto-cad software application for 2D drawing

Generic Skills (GS)

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

- GS1.** write at least two language, preferably the local language at the site and basic English
- GS2.** provide clear and simple instructions, details & sketches to sub-ordinate
- GS3.** record and document daily productivity report, daily labour attendance & details regarding work done
- GS4.** prepare basic status updates for the superiors in the prescribed format
- GS5.** read one or more language, preferably the local language at the site
- GS6.** read drawing, Bar bending schedule, specification and standards related to reinforcement works
- GS7.** read key documents including quality standards, standards working methods & applicable tolerance limits
- GS8.** read manufacturer instruction and specification for using power tools for reinforcement works
- GS9.** read various, sign boards, safety rules and safety tags , instruction related to exit routes during emergency at the workplace
- GS10.** speak in one or more language, preferably one of the local language at site
- GS11.** listen and follow instructions clearly given by the superior
- GS12.** provide clear instructions to subordinates for task as per work plan, time schedule and quality



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- GS13.** decide whether the work place is safe for working and also relevant task is not creating hazardous condition for others
- GS14.** decide on manpower, tools , material and equipment for relevant work
- GS15.** decide alternate course of action in case of hindrance to work
- GS16.** decide on prioritizing activity to meet demand at site
- GS17.** ensure completion of work as per agreed time schedule and quality
- GS18.** plan work targets, schedules for subordinates for completion of task as per work plan, time schedule and quality
- GS19.** ensure completion of work as per agreed time schedule and quality
- GS20.** suggest remedial action to workers for making corrections
- GS21.** resolve any conflict within the team
- GS22.** carry out basic troubleshooting for operation of CNC machine
- GS23.** reconcile material consumption
- GS24.** assess quantity of resources required for day work
- GS25.** optimize resources
- GS26.** minimize wastages
- GS27.** make use of available cut piece of rebars for chairs, spacer, hanger bar to minimize wastage
- GS28.** segregate prime length of steel rods based on diameter of bar
- GS29.** assess complexity of the tasks and carry out corrective action as per requirement
- GS30.** identify and assess how violation of any safety norms may lead to accidents



Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Carry out reinforcement and related monitoring works at reinforcement yard</i>	40	60	-	-
PC1. inspect incoming / outgoing material at reinforcement yard	2	3	-	-
PC2. carry out weighing of steel reinforcement before unloading at site in coordination with the stores	2	3	-	-
PC3. visually check for quality of reinforcement steel against rusting	2	3	-	-
PC4. ensure appropriate protection measures rebars	3	4.5	-	-
PC5. ensure standard practices for storing and stacking of reinforcement steel at the yard	3	4.5	-	-
PC6. monitor all rebars cutting and bending activity at yard	4	6	-	-
PC7. monitor threading activity ensure protection of threaded end part with plastic caps	3	4.5	-	-
PC8. understand manufacturer specification/instruction for use of CNC machine	1	1.5	-	-
PC9. understand manufacturer specification/instruction for use of power tools for cutting and bending	1	1.5	-	-
PC10. perform basic troubleshooting for operation of CNC machine	4	6	-	-
PC11. ensure bundling/tagging and stacking of cut & bent bars as per bar marking the BBS	2	3	-	-
PC12. ensure to prevent distortion of fabricated bars during handling	3	4.5	-	-
PC13. ensure proper use of slings, belts, hook for lifting of rebars using crane	2	3	-	-
PC14. ensure maximum use of cut length & minimise wastage	4	6	-	-



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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC15. segregate prime length of steel rods based on diameter of bar	2	3	-	-
PC16. coordinate with seniors and stores, to ensure smooth operations of work at reinforcement yard	1	1.5	-	-
PC17. coordinate with site to meet demand requirement at site on priority basis	1	1.5	-	-
NOS Total	40	60	-	-



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National Occupational Standards (NOS) Parameters

NOS Code	CON/N0211
NOS Name	Monitor reinforcement works at reinforcement yard
Sector	Construction
Sub-Sector	Real Estate and Infrastructure construction
Occupation	Bar Bending and Fixing
NSQF Level	5
Credits	TBD
Version	1.0
Last Reviewed Date	23/03/2015
Next Review Date	31/03/2022
NSQC Clearance Date	19/05/2015



CON/N0212: Ensure fabrication, placing and fixing of rebars as per drawing, bar bending schedule and specification

Description

This OS unit describes the skills and required to Ensure fabrication placing and fixing of rebars as per drawing, bar bending schedule and specification

Scope

The scope covers the following:

- Ensure completion of surveying, marking and other preparatory arrangement
- Extract work as per approved prepared BBS and drawing

Elements and Performance Criteria

Ensure completion of surveying, marking and preparatory arrangement

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

- PC1.** ensure survey works are complete so as to provide required level & reference points for reinforcement work
- PC2.** check and ensure that all relevant marking is complete as per drawing
- PC3.** check and ensure that cutting, filling, levelling and compaction of earth if required prior to commencement of work
- PC4.** ensure workplace is clear of construction debris and unwanted material
- PC5.** ensure guard rails, kerb boards and safety nets are in place
- PC6.** ensure all tools, tackles, consumables, materials and equipments are available before commencement of work
- PC7.** ensure scaffolding is complete as per required / specified heights / requirements, method, load carrying capacity, etc
- PC8.** ensure working platforms and access stairs are safe for working

Extract work as per approved prepared BBS and drawing

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

- PC9.** check and ensure only approved BBS is used for execution of reinforcement work
- PC10.** make use of already available cut steel rods to minimize wastage
- PC11.** plan sequence of insertion and fixing of rebars for different types of structures
- PC12.** correlate the sequence of reinforcement placing with fixing of inserts, sleeves, conduits and anchors
- PC13.** ensure completion of work as per agreed time schedule and quality
- PC14.** maintain productivity report for executed work

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:



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- KU1.** standard practices for reinforcement work
- KU2.** safety rules and regulations for handling and storing relevant tools, equipment and materials for reinforcement works
- KU3.** personal protection including the use of related safety gears & equipments
- KU4.** service request procedures for tools, materials and equipments
- KU5.** statutory compliance requirement related to workmen engagement
- KU6.** service request procedures for tools, materials, consumables and equipments
- KU7.** sequence of inserting bars to fix reinforcement for various types of structures
- KU8.** reinforcement patterns for any special structures / patterns
- KU9.** lap length required for rebars based on diameter
- KU10.** application of anchor grouting material
- KU11.** allowance of hook length
- KU12.** how to calculate number & spacing of rebar in case of different diameter rebar used
- KU13.** importance about providing cover block
- KU14.** importance of lap length & staggering of reinforcement
- KU15.** types and optimum use of binding wire
- KU16.** common terminology used in reinforcement works
- KU17.** corrective measure for reinforcement
- KU18.** method & fixing of mechanical coupler
- KU19.** method to prevent reinforcement from rust
- KU20.** max allowable wastage of rebars
- KU21.** basic reconciliation of reinforcement
- KU22.** rolling marking of reinforcement
- KU23.** units of measurement
- KU24.** conversion of units
- KU25.** basic of geometry
- KU26.** unit weight of rebars of different diameter
- KU27.** computer basics auto-cad software application for 2D drawing

Generic Skills (GS)

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

- GS1.** write at least two language, preferably the local language at the site and basic English
- GS2.** provide clear and simple instructions, details & sketches to sub-ordinate
- GS3.** record and document daily productivity report, daily labour attendance & details regarding work done
- GS4.** prepare basic status updates for the superiors in the prescribed format
- GS5.** read one or more language, preferably the local language at the site
- GS6.** read drawing, Bar bending schedule, specification and standards related to reinforcement works



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- GS7.** read key documents including quality standards, standards working methods & applicable tolerance limits
- GS8.** read manufacturer instruction and specification for using power tools for reinforcement works
- GS9.** read various, sign boards, safety rules and safety tags , instruction related to exit routes during emergency at the workplace
- GS10.** speak in one or more language, preferably one of the local language at site
- GS11.** listen and follow instructions clearly given by the superior
- GS12.** provide clear instructions to subordinates for task as per work plan, time schedule and quality
- GS13.** decide whether the work place is safe for working and also relevant task is not creating hazardous condition for others
- GS14.** decide on prioritizing activity to meet site requirement
- GS15.** decide on completion of preceding activity for further course of action
- GS16.** decide on use of cut piece length of rebar for different purpose
- GS17.** decide on manpower, tools , material and equipment for relevant work
- GS18.** decide alternate course of action in case of hindrance to work
- GS19.** plan work & organize required resource in coordination with team members and superior
- GS20.** plan work targets, schedules for subordinates for completion of task as per work plan, with allocated time schedule and to quality desired
- GS21.** ensure completion of work as per agreed time schedule and quality
- GS22.** suggest remedial action to workers for making corrections if required
- GS23.** resolve problem related to insertion & fixing process for complex structure
- GS24.** provide solution for replacement of one dia bar with other if required dia of bar is not available
- GS25.** resolve any conflict within the team
- GS26.** carry out basic troubleshooting for operation of CNC machine
- GS27.** reconcile material consumption
- GS28.** assess quantity of resources required for day work
- GS29.** optimize resources
- GS30.** minimize wastages
- GS31.** make use of available cut piece of rebars for chairs, spacer, hanger bar to minimize wastage
- GS32.** provide solution for replacement of one dia bar with other if required dia of bar is not available
- GS33.** assess complexity of the tasks and carry out corrective action as per requirement
- GS34.** identify and assess how violation of any safety norms may lead to accidents



Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Ensure completion of surveying, marking and preparatory arrangement</i>	23	34.5	-	-
PC1. ensure survey works are complete so as to provide required level & reference points for reinforcement work	2	3	-	-
PC2. check and ensure that all relevant marking is complete as per drawing	5	7.5	-	-
PC3. check and ensure that cutting, filling, levelling and compaction of earth if required prior to commencement of work	4	6	-	-
PC4. ensure workplace is clear of construction debris and unwanted material	2	3	-	-
PC5. ensure guard rails, kerb boards and safety nets are in place	4	6	-	-
PC6. ensure all tools, tackles, consumables, materials and equipments are available before commencement of work	2	3	-	-
PC7. ensure scaffolding is complete as per required / specified heights / requirements, method, load carrying capacity, etc	2	3	-	-
PC8. ensure working platforms and access stairs are safe for working	2	3	-	-
<i>Extract work as per approved prepared BBS and drawing</i>	17	25.5	-	-
PC9. check and ensure only approved BBS is used for execution of reinforcement work	2	3	-	-
PC10. make use of already available cut steel rods to minimize wastage	3	4.5	-	-
PC11. plan sequence of insertion and fixing of rebars for different types of structures	2	3	-	-
PC12. correlate the sequence of reinforcement placing with fixing of inserts, sleeves, conduits and anchors	4	6	-	-



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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. ensure completion of work as per agreed time schedule and quality	5	7.5	-	-
PC14. maintain productivity report for executed work	1	1.5	-	-
NOS Total	40	60	-	-



Qualification Pack



National Occupational Standards (NOS) Parameters

NOS Code	CON/N0212
NOS Name	Ensure fabrication, placing and fixing of rebars as per drawing, bar bending schedule and specification
Sector	Construction
Sub-Sector	Real Estate and Infrastructure construction
Occupation	Bar Bending and Fixing
NSQF Level	5
Credits	TBD
Version	1.0
Last Reviewed Date	23/03/2015
Next Review Date	31/03/2022
NSQC Clearance Date	19/05/2015



CON/N0213: Inspect and check the quality of reinforcement work

Description

This OS unit describes the skills and knowledge required to Inspect and check the quality of reinforcement work

Scope

The scope covers the following:

- Inspect and check the quality of reinforcement work.
- Inspect and check quality of mechanical connections of rebar.
- Inspect and check the quality of pre-fabricated reinforcement cage & erection process

Elements and Performance Criteria

Inspect and check the quality of reinforcement work

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

- PC1.** check & ensure marking of rebars for spacing before commencement of work
- PC2.** check for bend, cutting length before fabrication & placing of reinforcement
- PC3.** check for visual quality & length of binding wire used for tying of reinforcement
- PC4.** check reinforcement is free from rust before fabrication
- PC5.** describe sequence for fixing of reinforcement
- PC6.** ensure cutting of bars as per appropriate markings
- PC7.** ensure uniform spacing between the bars, stirrups, hooks, etc. as per BBS drawing
- PC8.** ensure more than 50% of splicing is avoided at a location
- PC9.** check location and position of reinforcement and fix ties to reinforcement as per requirement
- PC10.** ensure use of spacers, cover blocks, hanger bars, chairs as per specification
- PC11.** point out errors to workers and suggest remedial action and ensure repair work is done as instructed
- PC12.** check and ensure correct ties used for tying of reinforcement
- PC13.** point out errors to workers, suggest & demonstrate remedial action / repair work and ensure corrective action is taken

Inspect and check quality of mechanical connections of rebar

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

- PC14.** ensure that appropriate type of mechanical couplers are installed while fixing reinforcement
- PC15.** ensure that process followed for installing mechanical coupler is as per manufacturers instruction manual
- PC16.** check that mechanical connections have been appropriately tightened and as per requirement
- PC17.** check that necessary protectors are in place to prevent damage to the threaded bar ends
- PC18.** point out errors to workers, suggest & demonstrate remedial action / repair work and ensure corrective action is taken



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Inspect and check the quality of pre-fabricated reinforcement cage & erection process

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

- PC19.** check & ensure appropriate method is used for lifting & lowering of reinforcement cage
- PC20.** check & ensure prefabricated reinforcement cage is properly aligned & positioned
- PC21.** ensure rebars, cast-in items, corrugated sleeve pipes, recesses, lifting hooks and inserts are correctly positioned and properly secured, within specified tolerance levels
- PC22.** ensure that the joints and edges of the mould, bolts, stoppers, tie rods, side props and rubber seal are intact and properly secured
- PC23.** check for stiffening of cage before lifting for stacking/erection
- PC24.** ensure insertion/attaching of inserts to the cage including special cover blocks
- PC25.** ensure preparation & usage of reference frames/jig for accurate fabrication
- PC26.** point out errors to workers, suggest & demonstrate remedial action / repair work and ensure corrective action is taken

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** standard practices for reinforcement work
- KU2.** safety rules and regulations for handling and storing relevant tools, equipment and materials for reinforcement works
- KU3.** personal protection including the use of related safety gears & equipments
- KU4.** service request procedures for tools, materials and equipments
- KU5.** statutory compliance requirement related to workmen engagement
- KU6.** standard procedure for reinforcement works
- KU7.** Bar Bending Schedule, relevant drawings, sketches and BBS
- KU8.** precautions and measures that may be required while checking reinforcement work
- KU9.** tolerance limits for various types of reinforcement works as per Indian/International codes
- KU10.** importance of reinforcement in precast RCC works
- KU11.** types of mechanical couplers and manufacturers instructions for their installations
- KU12.** operation of hand tools, power tools, CNC machine for their respective applications in reinforcement work
- KU13.** reinforcement insertion procedures for special structures like arches, domes, etc.
- KU14.** safety rules and regulations at site
- KU15.** PPE for steel fixing and bar bending work
- KU16.** computer basics auto-cad software application for 2D drawings

Generic Skills (GS)

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

- GS1.** write at least two language, preferably the local language at the site and basic English
- GS2.** provide clear and simple instructions, details & sketches to sub-ordinate



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- GS3.** record and document daily productivity report, daily labour attendance & details regarding work done
- GS4.** prepare basic status updates for the superiors in the prescribed format
- GS5.** read one or more language, preferably the local language at the site
- GS6.** read drawing, Bar bending schedule, specification and standards related to reinforcement works
- GS7.** read key documents including quality standards, standards working methods & applicable tolerance limits
- GS8.** read manufacturer instruction and specification for using power tools for reinforcement works
- GS9.** read various, sign boards, safety rules and safety tags , instruction related to exit routes during emergency at the workplace
- GS10.** speak in one or more language, preferably one of the local language at site
- GS11.** listen and follow instructions clearly given by the superior
- GS12.** provide clear instructions to subordinates for task as per work plan, time schedule and quality
- GS13.** decide whether the work place is safe for working and also relevant task is not creating hazardous condition for others
- GS14.** decide on acceptance criteria for the completed work
- GS15.** decide on prioritizing activity to meet site requirement
- GS16.** decide on completion of preceding activity for further course of action
- GS17.** plan work & organize required resource in coordination with team members and superior
- GS18.** plan work targets, schedules for subordinates for completion of task as per work plan, time schedule and quality
- GS19.** ensure completion of work as per agreed time schedule and quality
- GS20.** suggest remedial action to workers for making corrections if required
- GS21.** provide solution for replacement of one dia bar with other if required dia of bar is not available
- GS22.** resolve any conflict within the team
- GS23.** reconcile material consumption
- GS24.** assess quality of extracted work for its acceptance
- GS25.** optimize resources
- GS26.** minimize wastages
- GS27.** provide solution for replacement of one dia bar with other if required dia of bar is not available
- GS28.** assess complexity of the tasks and carry out corrective action as per requirement
- GS29.** identify and assess how violation of any safety norms may lead to accidents



Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Inspect and check the quality of reinforcement work</i>	16	24	-	-
PC1. check & ensure marking of rebars for spacing before commencement of work	2	3	-	-
PC2. check for bend, cutting length before fabrication & placing of reinforcement	1	1.5	-	-
PC3. check for visual quality & length of binding wire used for tying of reinforcement	2	3	-	-
PC4. check reinforcement is free from rust before fabrication	1	1.5	-	-
PC5. describe sequence for fixing of reinforcement	1	1.5	-	-
PC6. ensure cutting of bars as per appropriate markings	2	3	-	-
PC7. ensure uniform spacing between the bars, stirrups, hooks, etc. as per BBS drawing	1	1.5	-	-
PC8. ensure more than 50% of splicing is avoided at a location	1	1.5	-	-
PC9. check location and position of reinforcement and fix ties to reinforcement as per requirement	1	1.5	-	-
PC10. ensure use of spacers, cover blocks, hanger bars, chairs as per specification	1	1.5	-	-
PC11. point out errors to workers and suggest remedial action and ensure repair work is done as instructed	1	1.5	-	-
PC12. check and ensure correct ties used for tying of reinforcement	1	1.5	-	-
PC13. point out errors to workers, suggest & demonstrate remedial action / repair work and ensure corrective action is taken	1	1.5	-	-
<i>Inspect and check quality of mechanical connections of rebar</i>	12	18	-	-



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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC14. ensure that appropriate type of mechanical couplers are installed while fixing reinforcement	1	1.5	-	-
PC15. ensure that process followed for installing mechanical coupler is as per manufacturers instruction manual	4	6	-	-
PC16. check that mechanical connections have been appropriately tightened and as per requirement	4	6	-	-
PC17. check that necessary protectors are in place to prevent damage to the threaded bar ends	2	3	-	-
PC18. point out errors to workers, suggest & demonstrate remedial action / repair work and ensure corrective action is taken	1	1.5	-	-
<i>Inspect and check the quality of pre-fabricated reinforcement cage & erection process</i>	12	18	-	-
PC19. check & ensure appropriate method is used for lifting & lowering of reinforcement cage	1	1.5	-	-
PC20. check & ensure prefabricated reinforcement cage is properly aligned & positioned	2	3	-	-
PC21. ensure rebars, cast-in items, corrugated sleeve pipes, recesses, lifting hooks and inserts are correctly positioned and properly secured, within specified tolerance levels	1	1.5	-	-
PC22. ensure that the joints and edges of the mould, bolts, stoppers, tie rods, side props and rubber seal are intact and properly secured	2	3	-	-
PC23. check for stiffening of cage before lifting for stacking/erection	2	3	-	-
PC24. ensure insertion/attaching of inserts to the cage including special cover blocks	2	3	-	-
PC25. ensure preparation & usage of reference frames/jig for accurate fabrication	1	1.5	-	-
PC26. point out errors to workers, suggest & demonstrate remedial action / repair work and ensure corrective action is taken	1	1.5	-	-



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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
NOS Total	40	60	-	-



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National Occupational Standards (NOS) Parameters

NOS Code	CON/N0213
NOS Name	Inspect and check the quality of reinforcement work
Sector	Construction
Sub-Sector	Real Estate and Infrastructure construction
Occupation	Bar Bending and Fixing
NSQF Level	5
Credits	TBD
Version	1.0
Last Reviewed Date	23/03/2015
Next Review Date	31/03/2022
NSQC Clearance Date	19/05/2015



CON/N7001: Plan, arrange and manage resources for execution of relevant work

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:

- Arrange and manage manpower
- Arrange allocate and manage tools, material and equipment

Elements and Performance Criteria

Arrange and manage manpower

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

- PC1.** determine quantum and nature of work under assigned activity
- PC2.** calculate requirement of manpower for assigned activities
- PC3.** submit manpower requirement to superiors
- PC4.** allocate and extract work as per plan
- PC5.** provide clear instructions to workmen for execution of work
- PC6.** ensure optimum utilization of manpower resources
- PC7.** record the daily labour attendance
- PC8.** record the daily productivity report

Arrange allocate and manage tools, material and equipment

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

- PC9.** estimate quantity of assigned work
- PC10.** estimate requirement for material, components and fixtures
- PC11.** estimate equipment, tools and accessories required
- PC12.** submit material, equipment and tool requirement to superiors
- PC13.** allocate material, equipment and tools to workmen and extract the work as per plan
- PC14.** provide clear instructions for optimized use of resources

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** standard practices for execution of relevant work
- KU2.** safety rules and regulations for handling and storing required tools, equipment and materials
- KU3.** personal protection including the use of related safety gears & equipments



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- KU4.** service request procedures for tools, materials and equipments
- KU5.** statutory compliance requirement related to workmen engagement
- KU6.** construction drawing of relevant work
- KU7.** manpower requirement on the basis of quantum of work and productivity
- KU8.** sequence and priority of activities
- KU9.** how to identify priority and critical activity of relevant task
- KU10.** method and technique on briefing team members about relevant work
- KU11.** different check to evaluate progress and quality of relevant works
- KU12.** importance of daily productivity report
- KU13.** importance of daily attendance register
- KU14.** standard working practices for relevant works
- KU15.** principles of measurements
- KU16.** conversion of units
- KU17.** arithmetic and geometric calculation
- KU18.** how to calculate quantum of relevant work
- KU19.** calculation of tools and material requirement
- KU20.** optimize use of available resources
- KU21.** computer basics auto-cad software application for 2D drawing

Generic Skills (GS)

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

- GS1.** write at least two language, preferably the local language at the site and basic English
- GS2.** provide clear and simple instructions, details & sketches to sub-ordinate
- GS3.** record and document daily productivity report, daily labour attendance & details regarding work done
- GS4.** prepare basic status updates for the superiors in the prescribed format
- GS5.** read one or more language, preferably the local language at the site
- GS6.** read relevant drawing, specification and standards
- GS7.** read key documents including quality standards, standards working methods & applicable tolerance limits
- GS8.** read manufacturer instruction and specification for relevant work
- GS9.** read various, sign boards, safety rules and safety tags , instruction related to exit routes during emergency at the workplace
- GS10.** speak in one or more language, preferably one of the local language at site
- GS11.** listen and follow instructions clearly given by the superior
- GS12.** provide clear instructions to subordinates for completion of task as per work plan, time schedule and quality
- GS13.** decide whether workplace is safe for working and also his work is not creating hazardous conditions for other
- GS14.** decide on manpower, tools , material and equipment for relevant work



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- GS15.** decide alternate course of action in case of hindrance to work
- GS16.** plan work & organize required resource in coordination with team members and superior
- GS17.** plan work targets, schedules for subordinates for completion of task as per work plan, time schedule and quality
- GS18.** ensure completion of work as per agreed time schedule and quality
- GS19.** suggest remedial action to workers for making corrections
- GS20.** resolve and solve any conflict within the team
- GS21.** reconcile material consumption
- GS22.** assess quantity of resources required for day work
- GS23.** optimize resources
- GS24.** minimize wastages
- GS25.** assess complexity of the tasks and carry out corrective action as per requirement
- GS26.** identify and assess how violation of any safety norms may lead to accidents



Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Arrange and manage manpower</i>	22	33	-	-
PC1. determine quantum and nature of work under assigned activity	2	3	-	-
PC2. calculate requirement of manpower for assigned activities	3	4.5	-	-
PC3. submit manpower requirement to superiors	2	3	-	-
PC4. allocate and extract work as per plan	3	4.5	-	-
PC5. provide clear instructions to workmen for execution of work	3	4.5	-	-
PC6. ensure optimum utilization of manpower resources	3	4.5	-	-
PC7. record the daily labour attendance	3	4.5	-	-
PC8. record the daily productivity report	3	4.5	-	-
<i>Arrange allocate and manage tools, material and equipment</i>	18	27	-	-
PC9. estimate quantity of assigned work	3	4.5	-	-
PC10. estimate requirement for material, components and fixtures	3	4.5	-	-
PC11. estimate equipment, tools and accessories required	3	4.5	-	-
PC12. submit material, equipment and tool requirement to superiors	3	4.5	-	-
PC13. allocate material, equipment and tools to workmen and extract the work as per plan	3	4.5	-	-
PC14. provide clear instructions for optimized use of resources	3	4.5	-	-
NOS Total	40	60	-	-



Qualification Pack



National Occupational Standards (NOS) Parameters

NOS Code	CON/N7001
NOS Name	Plan, arrange and manage resources for execution of relevant work
Sector	Construction
Sub-Sector	Generic
Occupation	Generic
NSQF Level	5
Credits	TBD
Version	1.0
Last Reviewed Date	23/03/2015
Next Review Date	31/03/2022
NSQC Clearance Date	19/05/2015



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 effectively with co-workers, superiors and sub-ordinates across different teams
- Support co-workers, superiors and sub-ordinates within the team and across interfacing teams to ensure effective execution of assigned task

Elements and Performance Criteria

Interact and communicate in effective and conclusive 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.** address the problems effectively and report if required to immediate supervisor appropriately
- PC4.** receive instructions clearly from superiors and respond effectively on the same
- PC5.** communicate to team members/subordinates for appropriate work technique and method
- PC6.** seek clarification and advice as per the requirement and applicability

Support co-workers to execute 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

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** own roles and responsibilities
- KU2.** importance of effective communication and establishing strong working
- KU3.** risks of a failure in teamwork in terms of effects on project outcomes, timelines, safety at the construction site, etc.
- KU4.** different modes of communication, and its appropriate usage
- KU5.** importance of creating healthy and cooperative work environment among the gangs of workers



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- KU6.** different activities within his work area where an 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
- KU9.** importance and need of supporting co-workers facing problems for smooth

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 in one or more languages, preferably the local language of the site
- GS3.** read communication from team members regarding work completed, materials used, tools and tackles used, support required
- GS4.** speak in one or more languages, preferably in one of the local language of the site
- GS5.** listen and follow instructions / communication shared by superiors/ co-workers regarding team requirements or interfaces during work processes
- GS6.** orally communicate with co-workers regarding support required to complete the respective work
- GS7.** decide on what information is to be shared with co-workers within the team or from interfacing gang of workers
- GS8.** plan work and organize required resources in coordination with team members
- GS9.** complete all assigned task in coordination with team members
- GS10.** take initiative in resolving issues among co-workers or report the same to superiors
- GS11.** ensure best ways of coordination among team members
- GS12.** communicate with co-workers considering their educational / social background
- GS13.** 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 effective and conclusive manner</i>	28	42	-	-
PC1. pass on work related information/ requirement clearly to the team members	4	6	-	-
PC2. inform co-workers and superiors about any kind of deviations from work	4	6	-	-
PC3. address the problems effectively and report if required to immediate supervisor appropriately	8	12	-	-
PC4. receive instructions clearly from superiors and respond effectively on the same	4	6	-	-
PC5. communicate to team members/subordinates for appropriate work technique and method	4	6	-	-
PC6. seek clarification and advice as per the requirement and applicability	4	6	-	-
<i>Support co-workers to execute project requirements</i>	12	18	-	-
PC7. hand over the required material, tools tackles, equipment and work fronts timely to interfacing teams	6	9	-	-
PC8. work together with co-workers in a synchronized manner	6	9	-	-
NOS Total	40	60	-	-



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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	Generic
Occupation	Generic
NSQF Level	5
Credits	TBD
Version	1.2
Last Reviewed Date	23/05/2015
Next Review Date	31/03/2022
NSQC Clearance Date	21/07/2016



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

Elements and Performance Criteria

Prioritize work activities to achieve desired results

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

- PC1.** understand clearly the targets and timelines set by superiors
- PC2.** plan activities as per schedule and sequence
- PC3.** provide guidance to the subordinates to obtain desired outcome
- PC4.** plan housekeeping activities prior to and post completion of work

Organize desired resources prior to commencement of work

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

- PC5.** list and arrange required resources prior to commencement of work
- PC6.** select and employ correct tools, tackles and equipment for completion of desired work
- PC7.** complete the work with allocated resources
- PC8.** engage allocated manpower in an appropriate manner
- PC9.** use resources in an optimum manner to avoid any unnecessary wastage
- PC10.** employ tools, tackles and equipment with care to avoid damage to the same
- PC11.** organize work output, materials used, tools and tackles deployed
- PC12.** processes adopted to be in line with the specified standards and instructions

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** importance of proper housekeeping
- KU2.** policies, procedures and work targets set by superiors
- KU3.** roles and responsibilities in executing the work for subordinates and self
- KU4.** standard practices of work to be adopted for assigned task
- KU5.** 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 at least one language, preferably in the local language of the site
- GS2.** list out the assigned works and targets



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- GS3.** read in one or more language, preferably the local language at the site
- GS4.** read communication from co-workers, superiors and notices from other departments as per requirement of the level
- GS5.** speak in one or more language, preferably one of the local language at the site
- GS6.** listen and follow communication shared by co-workers regarding standard work processes, resources available, timelines, etc.
- GS7.** communicate effectively with co-workers and subordinates
- GS8.** decide on what sequence is to be adopted for execution of work
- GS9.** plan and organize the materials, tools, tackles and equipment required to execute the work
- GS10.** complete all assigned task with proper planning and organizing
- GS11.** arrange or seek help to arrange for material, tools and tackles in case of shortfall
- GS12.** analyze areas of work which could result in a delay of work, wastage of material or damage to tools and tackles
- GS13.** 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>Prioritize work activities to achieve desired results</i>	17	25.5	-	-
PC1. understand clearly the targets and timelines set by superiors	5	7.5	-	-
PC2. plan activities as per schedule and sequence	4	6	-	-
PC3. provide guidance to the subordinates to obtain desired outcome	5	7.5	-	-
PC4. plan housekeeping activities prior to and post completion of work	3	4.5	-	-
<i>Organize desired resources prior to commencement of work</i>	23	34.5	-	-
PC5. list and arrange required resources prior to commencement of work	4	6	-	-
PC6. select and employ correct tools, tackles and equipment for completion of desired work	3	4.5	-	-
PC7. complete the work with allocated resources	3	4.5	-	-
PC8. engage allocated manpower in an appropriate manner	2	3	-	-
PC9. use resources in an optimum manner to avoid any unnecessary wastage	2	3	-	-
PC10. employ tools, tackles and equipment with care to avoid damage to the same	2	3	-	-
PC11. organize work output, materials used, tools and tackles deployed	4	6	-	-
PC12. processes adopted to be in line with the specified standards and instructions	3	4.5	-	-
NOS Total	40	60	-	-



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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	Generic
Occupation	Generic
NSQF Level	5
Credits	TBD
Version	1.1
Last Reviewed Date	23/03/2015
Next Review Date	31/03/2022
NSQC Clearance Date	19/05/2015



CON/N8003: Supervise, monitor and evaluate performance of subordinates at workplace

Description

This OS covers the skills and knowledge required by an individual to supervise, monitor and evaluate performance of subordinates at work place

Scope

The scope covers the following:

- Monitor all construction work activities performed by subordinates and evaluate their performance and ensure strict adherence to quality instructions & timelines as per organizational policies and procedures

Elements and Performance Criteria

Supervise, monitor and evaluate performance of all subordinates and ensure adherence to organizational policies and procedures

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

- PC1.** fix expected targets for the respective gang as per site requirements and allocate work to subordinates
- PC2.** establish expected performance standards and expectations for the respective gang of workers to meet the desired outcomes
- PC3.** inspect assigned work to the respected gang of workers through progressive checking
- PC4.** observe and verify the work activities performed by the subordinates at the construction site
- PC5.** monitor overall performance of subordinates on the designed measures to ensure quality requirements set by the concerned authority
- PC6.** ensure adherence to the organizational policies and procedures for all relevant construction activities by the workmen subordinations

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** policies, procedures and work targets for performance evaluation and appraisals
- KU2.** organizational policies, procedures and protocol for smooth completion of work at the respective workplace
- KU3.** complete work/task accurately by following standard specifications and procedures by optimized and correct used of materials , tools, tackles and equipment

Generic Skills (GS)

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



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- GS1.** write in at one or more language, preferably the local language
- GS2.** read in at one or more language, preferably the local language at the site
- GS3.** speak in at one or more language, preferably one of the local language at the site
- GS4.** effectively communicate with team members at workplace
- GS5.** rectify errors, select workman according to the performance and carry out appropriate allocation of task
- GS6.** motivate the subordinate for better quality work
- GS7.** plan work as per right sequence and organize required resources in coordination with the team members
- GS8.** complete work as per the requirement
- GS9.** solve any anomalies in work processes, critical problems & cause for delays at workplace
- GS10.** sort workers activities in order of sequence and importance workers
- GS11.** identify root cause and effects of workers conflicts at workplace
- GS12.** evaluate and find solutions to minimize errors and suggest improvements for optimizing resource utilization
- GS13.** assess which situations would require intervention of superiors



Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Supervise, monitor and evaluate performance of all subordinates and ensure adherence to organizational policies and procedures</i>	40	60	-	-
PC1. fix expected targets for the respective gang as per site requirements and allocate work to subordinates	6	9	-	-
PC2. establish expected performance standards and expectations for the respective gang of workers to meet the desired outcomes	6	9	-	-
PC3. inspect assigned work to the respected gang of workers through progressive checking	8	12	-	-
PC4. observe and verify the work activities performed by the subordinates at the construction site	8	12	-	-
PC5. monitor overall performance of subordinates on the designed measures to ensure quality requirements set by the concerned authority	6	9	-	-
PC6. ensure adherence to the organizational policies and procedures for all relevant construction activities by the workmen subordinations	6	9	-	-
NOS Total	40	60	-	-



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National Occupational Standards (NOS) Parameters

NOS Code	CON/N8003
NOS Name	Supervise, monitor and evaluate performance of subordinates at workplace
Sector	Construction
Sub-Sector	Generic
Occupation	Generic
NSQF Level	5
Credits	TBD
Version	1.0
Last Reviewed Date	23/03/2015
Next Review Date	31/03/2022
NSQC Clearance Date	19/05/2015



CON/N9002: Manage workplace for safe and healthy work environment

Description

This unit describes the skill and knowledge required to maintain a healthy & safe working environment for the group of people working under an individual

Scope

This unit/task covers the following:

- Ensure healthy and safe working environment for subordinates.
- Ensure effective implementation of health, safety and environment policies and procedures
- Identify and respond to risks / fire and emergencies associated with the work practices, workplace and ensure related organizational & statutory requirement as followed

Elements and Performance Criteria

Ensure healthy and safe working environment for subordinates

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

- PC1.** ensure proper housekeeping at workplace
- PC2.** implement safe handling , stacking methods at workplace / store
- PC3.** ensure that health and safety plan is followed by all subordinates
- PC4.** Identify any hazard in workplace and notify them to appropriate authority
- PC5.** ensure that all safety and protection installation are correctly placed & adequate
- PC6.** ensure safe access is available at work place for movement of workers & materials
- PC7.** ensure safe use of tools and tackles by the workmen as per applicability
- PC8.** ensure appropriate use of following Personal Protective Equipment (PPE) as per applicability: Head Protection (Helmets Ear Protection Fall Protection Foot Protection Face and Eye Protection, Hand &Body Protection Respiratory Protection
- PC9.** maintain entrances & exit from confined spaces , excavated pits and other location in concurrence with safety parameters or instruction from safety personals

Identify and respond to risks / fire and emergencies associated with the work practices, workplace and ensure related organizational & statutory requirement as followed

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

- PC10.** ensure organizational policies and procedures are followed for health , safety and welfare, in relation to: methods of receiving or sourcing information dealing with accidents and emergencies associated with the work and environment reporting stooping work evacuation fire risks and safe exit procedures
- PC11.** follow procedures for accident recording and reporting as per organizational and statutory requirements
- PC12.** ensure effective adherence to response to emergency procedures /protocols
- PC13.** report any case of emergency / risks to the concern people at the construction site
- PC14.** report any perceived risk hazards to the superiors / concerned EHS
- PC15.** demonstrate the use of fire protection equipments for different type of fire hazard



PC16. implement control measures to reduce risk & meet legal requirement as per organizational policies

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** the policies, procedures and protocol set up by the EHS Department With respect to Health , Safety and Environment at the respective construction site
- KU2.** reporting procedures in cases of breaches or hazards in site safety, accidents or emergency situations
- KU3.** safe working practices for tools, tackles and equipment
- KU4.** workplace policies and health and safety requirements for dealing with potential risks as defined by the EHS department
- KU5.** how to respond to accidents & emergencies
- KU6.** the appropriate personal protective equipment to be used based on various working conditions
- KU7.** how to use necessary material ,tools, tackles and equipment in a safe and appropriate manner as specified by site EHS for each level and respective workman gang
- KU8.** monitoring working in workplace keeping safety & health in mind

Generic Skills (GS)

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

- GS1.** write in one or more language
- GS2.** read in one or more language
- GS3.** read instructions, rules, guidelines, sign boards related to safety as per the requirements
- GS4.** speak in one or more language, preferably one of the local language at the site
- GS5.** listen and follow instructions shared by site EHS and superiors regarding site safety
- GS6.** communicate reporting of site conditions, hazards, accidents, etc.
- GS7.** decide upon the appropriate application & installation of safety equipments like barricades and nets
- GS8.** decide upon the tools box talks contents
- GS9.** identify any hazards in workplace organize safety equipments prior to commencing work
- GS10.** work to ensure safe and healthy environmental conditions at workplace
- GS11.** identify analysis & report hazards, accidents, health and safety risks, etc. or seek help from the appropriate authorities to address the same as per the guidelines laid down by site EHS
- GS12.** analyze areas of work which are potential safety hazards and could result in damage to life or property for the respective gang at the construction site
- GS13.** respond to critical health risks or accidents on an urgent basis through appropriate actions



Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Ensure healthy and safe working environment for subordinates</i>	20	30	-	-
PC1. ensure proper housekeeping at workplace	2	3	-	-
PC2. implement safe handling , stacking methods at workplace / store	2	3	-	-
PC3. ensure that health and safety plan is followed by all subordinates	2	3	-	-
PC4. Identify any hazard in workplace and notify them to appropriate authority	2	3	-	-
PC5. ensure that all safety and protection installation are correctly placed & adequate	2	3	-	-
PC6. ensure safe access is available at work place for movement of workers & materials	2	3	-	-
PC7. ensure safe use of tools and tackles by the workmen as per applicability	4	6	-	-
PC8. ensure appropriate use of following Personal Protective Equipment (PPE) as per applicability: Head Protection (Helmets Ear Protection Fall Protection Foot Protection Face and Eye Protection, Hand &Body Protection Respiratory Protection	2	3	-	-
PC9. maintain entrances & exit from confined spaces , excavated pits and other location in concurrence with safety parameters or instruction form safety personals	2	3	-	-
<i>Identify and respond to risks / fire and emergencies associated with the work practices, workplace and ensure related organizational & statutory requirement as followed</i>	20	30	-	-



Qualification Pack



Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC10. ensure organizational policies and procedures are followed for health , safety and welfare, in relation to: methods of receiving or sourcing information dealing with accidents and emergencies associated with the work and environment reporting stooping work evacuation fire risks and safe exit procedures	4	6	-	-
PC11. follow procedures for accident recording and reporting as per organizational and statutory requirements	2	3	-	-
PC12. ensure effective adherence to response to emergency procedures /protocols	3	4.5	-	-
PC13. report any case of emergency / risks to the concern people at the construction site	3	4.5	-	-
PC14. report any perceived risk hazards to the superiors / concerned EHS	3	4.5	-	-
PC15. demonstrate the use of fire protection equipments for different type of fire hazard	3	4.5	-	-
PC16. implement control measures to reduce risk & meet legal requirement as per organizational policies	2	3	-	-
NOS Total	40	60	-	-



National Occupational Standards (NOS) Parameters

NOS Code	CON/N9002
NOS Name	Manage workplace for safe and healthy work environment
Sector	Construction
Sub-Sector	Generic
Occupation	Generic
NSQF Level	5
Credits	TBD
Version	1.0
Last Reviewed Date	23/03/2015
Next Review Date	31/03/2022
NSQC Clearance Date	19/05/2015

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) (PC) 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.
2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC.
3. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below).
4. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/ training center based on these criteria.
5. In case of successfully passing only certain number of NOSs, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack.
6. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack

Minimum Aggregate Passing % at QP Level : 70



Qualification Pack



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

Assessment Weightage

Compulsory NOS

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
CON/N0210.Read drawings, specification, standards and prepare Bar Bending Schedule	40	60	-	-	100	15
CON/N0211.Monitor reinforcement works at reinforcement yard	40	60	-	-	100	20
CON/N0212.Ensure fabrication, placing and fixing of rebars as per drawing, bar bending schedule and specification	40	60	-	-	100	10
CON/N0213.Inspect and check the quality of reinforcement work	40	60	-	-	100	20
CON/N7001.Plan, arrange and manage resources for execution of relevant work	40	60	-	-	100	15
CON/N8001.Work effectively in a team to deliver desired results at the workplace	40	60	-	-	100	5
CON/N8002.Plan and organize work to meet expected outcomes	40	60	-	-	100	2
CON/N8003.Supervise, monitor and evaluate performance of subordinates at workplace	40	60	-	-	100	3



Qualification Pack



National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
CON/N9002.Manage workplace for safe and healthy work environment	40	60	-	-	100	10
Total	360	540	-	-	900	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.
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.



Qualification Pack



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.