



# Model Curriculum

## Bar Bender & Steel Fixer (NSQF Level – 4)

**SECTOR: CONSTRUCTION**  
**SUB-SECTOR: REAL ESTATE AND INFRASTRUCTURE  
CONSTRUCTION**  
**OCCUPATION: BAR BENDING & FIXING**  
**REF. ID: CON/Q0203, VERSION 1.0**  
**NSQF LEVEL: 4**



  

# Certificate

**CURRICULUM COMPLIANCE TO  
QUALIFICATION PACK – NATIONAL OCCUPATIONAL  
STANDARDS**

is hereby issued by the  
**CONSTRUCTION SECTOR SKILLS COUNCIL**

for the  
**MODEL CURRICULUM**

Complying to National Occupational Standards of  
Job Role/ Qualification Pack: **'Bar Bender & Steel Fixer'** OP No. **'CON/Q 0203 NSQF Level 4'**

Date of Issuance: **December 31st, 2015**

Valid up to: **March 23<sup>rd</sup>, 2017**

*[Signature]*  
Authorised Signatory  
(Construction Skill Development Council)

*\* Valid up to the next review date of the Qualification Pack*



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# Bar Bender & Steel Fixer

## CURRICULUM / SYLLABUS

This program is aimed at training candidates for the job of a “Bar Bender & Steel fixer”, in the “Construction” Sector/Industry and aims at building the following key competencies amongst the learner

<b>Program Name</b>	<b>Bar Bender &amp; Steel Fixer</b>		
Qualification Pack Name & Reference ID.	Bar Bender & Steel Fixer CON/Q203		
Version No.	1.0	Version Update Date	30-12-2015
Pre-requisites to Training	Preferably 5 <sup>th</sup> Standards		
Training Outcomes	<b>After completing this programme, participants will be able to:</b> <ul style="list-style-type: none"><li>• <b>Read and understand routine drawings/sketches and Bar Bending Schedule:-</b> Basic concepts of drawings/sketches and Bar Bending Schedule used in routine works</li><li>• <b>Use hand and power tools for cutting and bending of reinforcement :-</b> Selection and use of hand and power tools for reinforcement steel cutting and bending</li><li>• <b>Prepare, fabricate, place and fix reinforcement for R.C.C structures: -</b> Methods and standard procedure for fabricating, placing and fixing of reinforcement steel for R.C.C structures</li><li>• <b>Work effectively in a team to deliver desired results at the workplace :-</b> Organised working procedure within a team at site</li><li>• <b>Plan and organize work to meet expected outcomes :-</b> Prioritizing activities and organising resources to meet desired outcome</li><li>• <b>Work according to personal health, safety and environment protocol at construction site:-</b> Importance of Health &amp; Safety aspects &amp; measures to be followed while working.</li></ul>		

This course encompasses 7 out of 7 National Occupational Standards (NOS) of “Assistant Electrician” Qualification Pack issued by “Construction Skill Development Council of India”.

Sr. No.	Module	Key Learning Outcomes	Equipment Required
1	<p><b>Introduction to the job role - (Lecture/ description by concerned trainer)</b></p> <p><b>Theory Duration</b> (hh:mm)</p> <p><b>Practical Duration</b> (hh:mm)</p> <p><b>Corresponding NOS Code</b></p>	<p><b>Theory:</b></p> <ul style="list-style-type: none"> <li>• Role description/ functions of the job role</li> <li>• Expected personal attributes from the job role</li> <li>• Brief description about course content, mode of learning and duration of course</li> <li>• Future possible progression and career development provisions on completion of the course</li> </ul>	<p><u>Classroom Requirement</u></p> <ol style="list-style-type: none"> <li>6. Classroom of 30 students capacity</li> <li>7. Black/White board</li> <li>8. Projector/LED Monitor</li> <li>9. Computer</li> <li>10. Trade specific charts and other teaching aids</li> </ol>
2	<p><b>Read and understand routine drawings/sketches and Bar Bending Schedule</b></p> <p><b>Theory Duration</b> (hh:mm) 10:00</p> <p><b>Practical Duration</b> (hh:mm) 30:00</p> <p><b>Corresponding NOS Code</b> CON/N0204</p>	<p><b>Theory:-</b></p> <ul style="list-style-type: none"> <li>• Purpose of Drawings/sketches, Basic concepts of drawings</li> <li>• Various detail provided in drawings (Type of rebar, size of rebar, cover to reinforcement, spacing, chairs requirement)</li> <li>• Understanding Bar Bending Schedule</li> <li>• Insertion and fixing sequence for different types of R.C.C structures (Slab, Beam, Column, Footing, Wall, Staircase)</li> <li>• Computation of number of bars, stirrups, chairs, spacer bar based on the spacing</li> <li>• Computation of cutting length for various shapes of rebars (L-shape, U-Shape) from sketches, drawings</li> <li>• Computation of cutting length from Bar Bending schedule</li> <li>• Deduction for bends</li> <li>• Computation of cutting length for Stirrups of various shape (Square, Rectangle, Circle)</li> <li>• Minimizing wastage of reinforcement steel</li> </ul> <p><b>Demonstration/ Practical :-</b></p> <ul style="list-style-type: none"> <li>• Reading of routine drawings/sketches</li> <li>• Reading of Bar Bending Schedule</li> <li>• Find out the details provided in the drawings/sketches such as diameter of rebar, shape of rebar, location of rebar, cutting length, cover to rebar etc.</li> </ul>	<p><u>Drawings/Sketches</u></p> <ol style="list-style-type: none"> <li>4. Drawings of various types of structures and structural elements</li> <li>5. Bar bending schedule sample</li> <li>6. Model room</li> </ol>

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		<ul style="list-style-type: none"> <li>Find out the details provided in the Bar Bending Schedule such as bar description, diameter of rebar, number of rebar, shape of rebar, cutting length</li> <li>Calculation of cutting length from drawings/sketches</li> <li>Calculation of cutting length from Bar Bending Schedule</li> <li>Explanation of insertion and fixing procedures for beam, column, slab, wall and footing</li> <li>Calculation of total weight of steel</li> </ul>	
3	<p><b>Use hand and power tools for cutting and bending of reinforcement</b></p> <p><b>Theory Duration</b> (hh:mm) 10:00</p> <p><b>Practical Duration</b> (hh:mm) 30:00</p> <p><b>Corresponding NOS Code</b> CON/N0205</p>	<p><b>Theory:-</b></p> <ul style="list-style-type: none"> <li>Selection of hand tool and power tools for cutting of reinforcement (Hammer &amp; chisel, Hack saw, held hand cutting machine, circular cutting machine, bar shearing machine)</li> <li>Selection of different type of hand and power tools for bending of reinforcement (Bending lever, Bending machine)</li> <li>Accessories used for reinforcement cutting and bending machine</li> <li>Application of measurement and marking tools</li> <li>Method of placing rebar in different types of machine for cutting of rebars</li> <li>Importance of correct body posture while doing cutting and bending of reinforcement</li> <li>Standard procedure for tagging and stacking of reinforcement steel</li> </ul> <p><b>Demonstration/ Practical :-</b></p> <ul style="list-style-type: none"> <li>Select hand tool for cutting of reinforcement bar based on diameter of rebar</li> <li>Select power tool such as hand held cutting machine, circular cutting machine, rebar shearing machine for cutting of reinforcement</li> <li>Select bending lever for bending of rebar based on the diameter of rebar</li> <li>Select accessories and fix on bending machine based on the diameter of rebar, shape and angle required</li> <li>Fix accessories to cutting and bending machine</li> <li>Use measurement and marking tool for marking on rebar</li> </ul>	<p><b>Hand Tools</b></p> <p>Chisel Hammer Bar tying hook Bending lever Guage measure Podger Spanner Hack saw blade and frame</p> <p><b>Measuring Instruments</b></p> <p>Steel scale Try Scale Spirit level Plumb bob Measurement tape</p> <p><b>Power Tools</b></p> <p>Cutting machine Bending machine Threading machine</p> <p><b>General requirement</b></p> <p>Reinforcement steel bar Binding wires Cover blocks Wooden planks Rebar tying machine Lifting appliance (Sling, Shackle, Belts)</p> <p><b>PPEs</b></p> <p>Safety Helmet Safety goggles Safety shoes Safety belt Cotton gloves Ear plugs Reflective jackets Dust mask Fire Prevention kit</p>

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		<ul style="list-style-type: none"> <li>• Cut rebar using hammer and chisel and maintain correct body posture while cutting</li> <li>• Cut rebar using cutting machine and maintain correct body posture while cutting</li> <li>• Bend rebar using bending lever and maintaining correct body posture</li> <li>• Bend rebar using bending machine and maintaining correct body posture</li> <li>• Demonstrate tagging and stacking of rebar as per standard procedure</li> </ul>	
4	<p><b>Prepare, fabricate, place and fix reinforcement for R.C.C structures</b></p> <p><b>Theory Duration</b> (hh:mm) 48:00</p> <p><b>Practical Duration</b> (hh:mm) 192:00</p> <p><b>Corresponding NOS Code</b> CON/N0206</p>	<p><b>Theory:-</b></p> <ul style="list-style-type: none"> <li>• Importance of specification provided in drawings</li> <li>• Insertion and fixing procedure for different types of R.C.C structural elements such as Beam, column, slab, wall, footing, staircase etc.</li> <li>• One-way and Two-way Slab</li> <li>• Importance of Prefabrication works and Prefabricated cages uses in construction</li> <li>• Lapping of reinforcement bar , purpose and calculation for lapping length</li> <li>• Different types of ties and their purpose for tying of different types of R.C.C structural element</li> <li>• Use of mechanical coupler</li> <li>• Use of chairs, spacer bar and hanger bars</li> <li>• Clear cover to reinforcement steel for various R.C.C structural element for normal condition and importance of providing cover</li> <li>• Tolerance limits for reinforcement works</li> <li>• Importance of stiffeners for Pre-fabricated cages</li> <li>• Types of cutting blades and quality check</li> <li>• Basics of concreting and shuttering works</li> <li>• Types of rebars based on material (M.S, TOR steel, TMT steel) , Grade</li> <li>• Electrical safety of power tools and equipments for bar bending works</li> </ul> <p><b>Demonstration/ Practical :-</b></p> <ul style="list-style-type: none"> <li>• Read and extract rebar detail from drawings</li> <li>• Demonstrate insertion and fixing procedure for various R.C.C structural element such as beam, column, slab, wall, footing, staircase etc.</li> </ul>	<p><b>Hand Tools</b> Bar tying hook Bending lever Hack saw blade and frame</p> <p><b>Measuring Instruments</b> Measurement tape</p> <p><b>Power Tools</b> Cutting machine Bending machine Threading machine</p> <p><b>General requirement</b> M.S, TOR steel, TMT steel Binding wires Steel cutting blade Mechanical coupler Cover blocks Wooden planks Rebar tying machine Lifting appliance (Sling, Shackle, Belts)</p> <p><b>PPEs</b> Safety Helmet Safety goggles Safety shoes Safety belt Cotton gloves Ear plugs Reflective jackets Dust mask Fire Prevention kit</p>

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		<ul style="list-style-type: none"> <li>• Mark, Place and fix rebar as per drawings</li> <li>• Demonstrate lapping of reinforcement for different diameter of rebar</li> <li>• Demonstrate fixing of mechanical coupler</li> <li>• Demonstrate placing and fixing of chair, spacer and hanger bar</li> <li>• Demonstrate Do's and Don't related to electrical safety of power tools</li> <li>• Check quality of reinforcement work in reference to right diameter of rebar use, placement, spacing and tying of rebar</li> <li>• Demonstrate how to tie stiffeners in Pre-fabricated cages</li> <li>• Demonstrates placement of rebar in case of One-way and Two-way slab</li> </ul>	
5	<p><b>Work effectively in a team to deliver desired results at the workplace</b></p> <p><b>Theory Duration</b> (hh:mm) 04:00</p> <p><b>Practical Duration</b> (hh:mm) 2:00</p> <p><b>Corresponding NOS Code</b> CON/N8001</p>	<p><b>Theory:-</b></p> <ul style="list-style-type: none"> <li>• Method of oral and written communication skills with co-workers related to cutting, bending and tying works</li> <li>• Method of oral and written communication skills for informing trade senior about any lack of information in the drawing/sketches or deviation from the work</li> <li>• Reading and interpretation of sketches</li> <li>• How to understand and follow work methods, by adhering to instructions or consulting with seniors</li> <li>• Method of providing instruction to subordinates or reporting to seniors clearly and promptly</li> <li>• Seek necessary support and complete assigned tasks within stipulated time duration</li> <li>• Keep good relation and maintain well behavior with co-workers</li> </ul> <p><b>Demonstration/ Practical :-</b> The skills will be developed and practiced while carrying out following trade related activities in a predictable and familiar working condition</p> <ol style="list-style-type: none"> <li>1. Selection of materials, tools or devices for defined purpose</li> <li>2. Handling material, tools and equipments relevant to reinforcement works</li> </ol>	



Sr. No.	Module	Key Learning Outcomes	Equipment Required
		<p>3. Carrying out cutting and bending of rebar</p> <p>4. Carrying out fabrication, placing and fixing of reinforcement for R.C.C structures</p> <p>6. Selection and handing over of desired/ appropriate tools/ materials while assisting trade senior</p>	
6	<p><b>Plan and organize work to meet expected outcomes</b></p> <p><b>Theory Duration</b> (hh:mm) 04:00</p> <p><b>Practical Duration</b> (hh:mm) 12:00</p> <p><b>Corresponding NOS Code</b> CON/N8002</p>	<p><b>Theory:-</b></p> <ul style="list-style-type: none"> <li>Basic concept of productivity, sequence of working and implementation of safety and organizational norms while working</li> <li>Optimization of resources</li> <li>To plan reinforcement activities within defined scope of work</li> <li>Upkeep, storing and stacking methods of tools, materials used for domain specific works</li> <li>Requisition of resources, reporting for requirement of resources orally and in written to concerned authority</li> <li>Importance of housekeeping,</li> </ul> <p><b>Demonstration/ Practical :-</b> The skills will be developed and practiced while carrying out following trade related activities in a predictable and familiar working condition</p> <ol style="list-style-type: none"> <li>Selection of materials, tools or devices for defined purpose in an optimum manner</li> <li>Handling material, tools and equipments relevant to reinforcements works</li> <li>Prioritize all works/ activities</li> <li>Planning cutting and bending activities</li> <li>Carrying out fabrication, placing and fixing of reinforcement for R.C.C structures</li> <li>Optimum use of resources while performing task</li> <li>Adherence to stipulated timelines for completion of electrical activities/ tasks</li> </ol>	
7	<p><b>Work according to personal health, safety and environment protocol at</b></p> <p><b>Theory Duration</b> (hh:mm) 08:00</p>	<p><b>Theory:-</b></p> <ul style="list-style-type: none"> <li>Types of hazards involved in construction sites</li> <li>Types of hazards involved in reinforcement works</li> <li>Emergency safety control measures and actions to be taken under emergency situation</li> <li>Identification of unsafe act and unsafe</li> </ul>	<p><b>PPEs</b></p> <p>Safety Helmet Safety goggles Safety shoes Safety belt Cotton gloves Ear plugs Reflective jackets Dust mask Fire Prevention kit</p>

Sr. No.	Module	Key Learning Outcomes	Equipment Required
	<p><b>Practical Duration</b> (hh:mm) 16:00</p> <p><b>Corresponding NOS Code</b> CON/N9001</p>	<p>condition</p> <ul style="list-style-type: none"> <li>• Concept of :- First Aid process Use of fire extinguisher Classification of fires and fire extinguisher Safety drills</li> <li>• Types and use of PPEs required for reinforcement works</li> <li>• Reporting procedure to the concerned authority in emergency situations</li> <li>• Standard procedure of handling, storing and stacking material</li> <li>• What is safe disposal of waste, type of waste and their disposal</li> <li>• basic ergonomic principles as per applicability</li> </ul> <p><b>Demonstration/ Practical :-</b> The skills will be developed and practiced while carrying out following trade related activities in a predictable and familiar working condition.</p> <ol style="list-style-type: none"> <li>1. Selection of PPEs and use them appropriately as per working need of reinforcement works, handling, storing, stacking and shifting of reinforcement material, tools and equipments</li> <li>2. Selection of PPEs and use them appropriately as per working need of cutting, bending , placing and fixing of rebar</li> <li>3. Identification of locations, situations/ circumstances, malpractices which can be hazardous for general or reinforcement works</li> <li>4. Selection of fire extinguisher based on classification of fire, standard practice of storing &amp; stacking fire fighting equipments/ materials at work locations</li> <li>5. Disposal of waste materials as per their nature and effects on weather</li> </ol>	
	<p><b>Total Duration</b></p> <p><b>Theory Duration</b> 84:00</p> <p><b>Practical Duration</b> 316:00</p>	<p><b>Classroom Requirement</b> Classroom of 30 students capacity, Black/White board, Projector/LED Monitor, Computer, Trade specific charts and other teaching aids</p> <p><b>Drawings/Sketches</b> Drawings of various types of structures and structural elements, Bar bending schedule sample, Model room</p>	

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		<p><b>Hand Tools</b> Chisel, Hammer, Bar tying hook, Bending lever, Guage measure, Podger Spanner, Hack saw blade and frame</p> <p><b>Measuring Instruments</b> Steel scale, Try Scale, Spirit level, Plumb bob, Measurement tape</p> <p><b>Power Tools</b> Cutting machine, Bending machine, Threading machine</p> <p><b>General requirement</b> Reinforcement steel bar, Binding wires, Cover blocks, Wooden planks, Rebar tying machine, Lifting appliance (Sling, Shackle, Belts) M.S, TOR steel, TMT steel Binding wires, Steel cutting blade, Mechanical coupler, Cover blocks, Wooden planks, Rebar tying machine, Lifting appliance (Sling, Shackle, Belts)</p> <p><b>PPEs</b> Safety Helmet , Safety goggles, Safety shoes, Safety belt, Cotton gloves, Ear plugs, Reflective jackets, Dust mask, Fire Prevention kit</p>	

**Grand Total Course Duration: 400 Hours 00 Minutes**

*This syllabus/ curriculum has been approved by [Construction Skill Development Council of India](#)*

## Trainer Prerequisites for Job role: “Bar Bender & Steel Fixer” mapped to Qualification Pack: “CON/Q0203”

Sr. No.	Area	Details
1	<b>Job Description</b>	To deliver accredited training service, mapping to the curriculum detailed above, in accordance with the Qualification Pack “CON/Q0202”.
2	<b>Personal Attributes</b>	Aptitude for conducting training, and pre/ post work to ensure competent, employable candidates at the end of the training. Strong communication skills, interpersonal skills, ability to work as part of a team; a passion for quality and for developing others; well-organised and focused, eager to learn and keep oneself updated with the latest in the mentioned field
3	<b>Minimum Educational Qualifications</b>	10 <sup>th</sup> standard or equivalent standard in literacy and numeracy
4a	<b>Domain Certification</b>	Certified for Job Role: “Reinforcement Fitter” mapped to QP: “CON/N0204”. Minimum accepted % as per respective SSC guidelines is 70%.
4b	<b>Platform Certification</b>	Recommended that the Trainer is certified for the Job Role: “Trainer”, mapped to the Qualification Pack: “SSC/Q1402”. Minimum accepted % as per respective SSC guidelines is 70%.
5	<b>Experience</b>	<ul style="list-style-type: none"> <li>i. Technical Degree holder with minimum Five years of Field &amp; Two years of teaching experience (At least one year each at workers and Engineers level) or,</li> <li>ii. In case of a Diploma Holder Ten years of field &amp; five years of teaching experience (Three years at workers level and two years at Engineers level) having Total experience to 15 yrs. or,</li> <li>iii. In case of specific to trades than should have qualified the Minimum Level- 4 and have Fifteen year of field experience and Three years of Teaching experience or,</li> <li>iv. Graduate or Intermediate should possess at least Level – 4 Certificate and have 12 years of field experience and two years of trade teaching experience or</li> </ul>



## Annexure: Assessment Criteria

<b>Assessment Criteria for Helper Mason</b>	
<b>Job Role</b>	<b>Bar Bender &amp; Steel Fixer</b>
<b>Qualification Pack</b>	<b>CON/Q0203, version 1.0</b>
<b>Sector Skill Council</b>	<b>Construction</b>

<b>Sr. No.</b>	<b>Guidelines for Assessment</b>
1	Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (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 knowledge part will be based on knowledge bank of questions created by Assessment Bodies subject to approval by SSC
3	Individual assessment agencies will create unique question papers for knowledge/theory part for assessment of candidates as per assessment criteria given below
4	Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on assessment criteria.
5	The passing percentage for each QP will be 70%. To pass the Qualification Pack, every trainee should score a minimum of 70% individually in each NOS.
6	The Assessor shall check the final outcome of the practices while evaluating the steps performed to achieve the final outcome.
7	The trainee shall be provided with a chance to repeat the test to correct his procedures in case of improper performance, with a deduction of marks for each iteration.
8	After the certain number of iteration as decided by SSC the trainee is marked as fail, scoring zero marks for the procedure for the practical activity.
9	In case of successfully passing only certain number of NOS's, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack within the specified timeframe set by SSC.
10	Minimum duration of Assessment of each QP shall be of 4hrs/trainee.

Assessment outcomes	Assessment Criteria for outcomes	Total Mark	Marks Allocation		
			Out Of	Theory	Skills Practical
<b>CON/N0204: Read and understand routine drawings/sketches and Bar Bending Schedule</b>	PC1. read and interpret basic detail from the sketches / drawings	<b>100</b>	10	2	8
	PC2. understand fixing/insertion sequence from the drawings		5	1	4
	PC3. find out the direction and position of rebars from the drawing		5	1	4
	PC4. calculate number of chairs, spacer bars requirement to be used		10	2	8
	PC5. find out the size and type of cover block to be used from the drawing		5	1	4
	PC6. calculate cutting length required for basic works from the sketches		10	2	8
	PC7. plan for cutting of rebars as per instructions		5	1	4
	PC8. read & interpret correct detail from Bar bending schedule including types, diameter, shape, cutting length, number of rebars		10	2	8
	PC9. calculate the cutting length of rebar from the provided BBS		15	3	12
	PC10. understand terms used in bar bending schedule		5	1	4
	PC11. estimate quantities of work from bar bending schedule		15	3	12
	PC12. plan for cutting of rebars as per instructions, considering minimum wastage and cutting length		5	1	4
	<b>Total</b>			<b>100</b>	<b>20</b>
<b>CON/N0205: Use hand and power tools for cutting and bending of reinforcement</b>	PC1. select hand tools/power tools for cutting rebars as per requirement / instruction	<b>100</b>	10	2	8
	PC2. select cutting blade for cutting of rebar as per requirement / instruction		5	1	4
	PC3. make use of measurement and marking tool to mark on rebars for cutting as per specified length in the BBS		10	2	8
	PC4. place rebars properly for cutting, as per requirement and instruction		5	1	4
	PC5. ensure adequate number of rods are placed for cutting to avoid damage to machine		5	1	4
	PC6. maintain correct body posture while cutting rebars manually or mechanically		10	2	8
	PC7. tag and stack rebars after cutting as per standards practices		5	1	4
	PC8. select hand/power tools for bending rebars with respect to the work		5	1	4
	PC9. select accessories for bending with respect to the diameter of rebar used & machine used		5	1	4
	PC10. mark on rebar and place & fix rods on correct position for bending		10	2	8
	PC11. maintain correct body posture while bending rebars manually or mechanically		5	1	4
	PC12. bend rebars as per the shape and dimensions		10	2	8

Assessment outcomes	Assessment Criteria for outcomes	Total Mark	Marks Allocation		
			Out Of	Theory	Skills Practical
	given in the BBS, including hooks				
	PC13. check for length, shape of rebars to ensure they are within the tolerance limit		10	2	8
	PC14. tag and stack rebars after bending as per standard practices		5	1	4
	<b>Total</b>		<b>100</b>	<b>20</b>	<b>80</b>
<b>CON/N0206: Prepare, fabricate, place and fix reinforcement for R.C.C structures</b>	PC1. read & understand relevant specification given in the sketches/drawing	<b>100</b>	5	1	4
	PC2. follow correct method for insertion/ fixing of rebars as per the types of structure		5	1	4
	PC3. select rebars for placement as per the drawing		5	1	4
	PC4. mark and place rebars, fabricate cage and fix on its position as per the drawing		10	2	8
	PC5. maintain uniform spacing between the bars, stirrups, link rod as per the drawing		10	2	8
	PC6. stagger the lap to avoid more than 50% of splicing		10	2	8
	PC7. place and fix mechanical coupler in case of higher diameter rebars used		5	1	4
	PC8. tie reinforcement with approved binding wires as per drawing with specified spacing		5	1	4
	PC9. ensure cover blocks and spacers are placed to maintain appropriate covers & spacing		5	1	4
	PC10. place and fix chairs at specified spacing to maintain correct thickness		10	2	8
	PC11. ensure that location and position of reinforcement and fixing ties to reinforcement are checked for accuracy		5	1	4
	PC12. follow sequence of tying as per method statement		10	2	8
	PC13. provide suitable stiffeners for lifting in case of prefabricated cage		5	1	4
	PC14. check quality of reinforcement work with reference to spacing, placement of rebars		5	1	4
	PC15. report to superior for checking of work executed and take corrective action if any error or issue is found		5	1	4
	<b>Total</b>		<b>100</b>	<b>20</b>	<b>80</b>
<b>CON/N8001: Work effectively in a team to deliver desired results at the workplace</b>	PC1. pass on work related information/ requirement clearly to the team members	<b>100</b>	10	2	8
	PC2. inform co-workers and superiors about any kind of deviations from work		5	1	4
	PC3. address the problems effectively and report if required to immediate supervisor appropriately		5	1	4
	PC4. receive instructions clearly from superiors and respond effectively on same		5	1	4
	PC5. communicate to team members/subordinates for appropriate work technique and method		5	1	4
	PC6. seek clarification and advice as per requirement		10	2	8

Assessment outcomes	Assessment Criteria for outcomes	Total Mark	Marks Allocation		
			Out Of	Theory	Skills Practical
	and applicability				
	PC7. hand over the required material, tools tackles, equipment and work fronts timely to interfacing teams		30	6	24
	PC8. work together with co-workers in a synchronized manner		30	6	24
		<b>Total</b>	<b>100</b>	<b>20</b>	<b>80</b>
<b>CON/N8002: Plan and organize work to meet expected outcomes</b>	PC1. understand clearly the targets and timelines set by superiors	<b>100</b>	10	2	8
	PC2. plan activities as per schedule and sequence		10	2	8
	PC3. provide guidance to the subordinates to obtain desired outcome		10	2	8
	PC4. plan housekeeping activities prior to and post completion of work		10	2	8
	PC5. list and arrange required resources prior to commencement of work		10	2	8
	PC6. select and employ correct tools, tackles and equipment for completion of desired work		10	2	8
	PC7. complete the work with allocated resources		10	2	8
	PC8. engage allocated manpower in an appropriate manner		10	2	8
	PC9. use resources in an optimum manner to avoid any unnecessary wastage		5	1	4
	PC10. employ tools, tackles and equipment with care to avoid damage to the same		5	1	4
	PC11. organize work output, materials used, tools and tackles deployed,		5	1	4
	PC12. processes adopted to be in line with the specified standards and instructions		5	1	4
			<b>Total</b>	<b>100</b>	<b>20</b>
<b>CON/N9001: Work according to personal health, safety and environment protocol at construction site</b>	PC1. identify and report any hazards, risks or breaches in site safety to the appropriate authorities	<b>100</b>	5	1	4
	PC2. follow emergency and evacuation procedures in case of accidents, fires, natural calamities		5	1	4
	PC3. follow recommended safe practices in handling construction materials, including chemical and hazardous material whenever applicable		10	2	8
	PC4. participate in safety awareness programs like Tool Box Talks, safety demonstrations, mock drills, conducted at site		5	1	4
	PC5. identify near miss, unsafe condition and unsafe act		5	1	4
	PC6. use appropriate Personal Protective Equipment (PPE) as per work requirements including: • Head Protection (Helmets) • Ear protection • Fall Protection • Foot Protection • Face and Eye Protection • Hand and Body Protection		10	2	8





Assessment outcomes	Assessment Criteria for outcomes	Total Mark	Marks Allocation		
			Out Of	Theory	Skills Practical
	• Respiratory Protection (if required)				
	PC7. handle all required tools, tackles , materials & equipment safely		5	1	4
	PC8. follow safe disposal of waste, harmful and hazardous materials as per EHS guidelines		5	1	4
	PC9. install and apply properly all safety equipment as instructed		15	3	12
	PC10. follow safety protocol and practices as laid down by site EHS department		15	3	12
	PC11. collect and deposit construction waste into identified containers before disposal, separate containers that may be needed for disposal of toxic or hazardous wastes		10	2	8
	PC12. apply ergonomic principles wherever required		10	2	8
		<b>Total</b>	<b>100</b>	<b>20</b>	<b>80</b>



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