Model Curriculum

1. Foreman Fabrication

SECTOR: Construction
SUB-SECTOR: Real Estate and Infrastructure Construction
OCCUPATION: Fabrication
REF ID: CON/Q01208, V1.0
NSQF LEVEL: 5

Skill India
GOVERNMENT OF INDIA
MINISTRY OF SKILL DEVELOPMENT & ENTREPRENEURSHIP
N·S·D·C National Skill Development Corporation
Transforming the skill landscape

Certificate

CURRICULUM COMPLIANCE TO QUALIFICATION PACK – NATIONAL OCCUPATIONAL STANDARDS

is hereby issued by the

CONSTRUCTION SKILL DEVELOPMENT COUNCIL OF INDIA

for the

MODEL CURRICULUM

Complying to National Occupational Standards of
Job Role/ Qualification Pack: '**Foreman Fabrication**' QP No. '**CON/Q 1208 NSQF Level 5**'

Date of Issuance: **June 30th, 2017**

Valid up to: **August 14th, 2017**

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

Authorised Signatory
(Construction Skill Development Council of India)

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Foreman Fabrication

CURRICULUM / SYLLABUS

This program is aimed at training candidates for the job of a "Foreman Fabrication", in the "Construction" Sector/Industry and aims at building the following key competencies amongst the learner

Program Name	**Foreman Fabrication**		
Qualification Pack Name & Reference ID. ID	CON/Q1208, v1.0		
Version No.	1.0	**Version Update Date**	14-08-2017
Pre-requisites to Training	Preferably 12th standard with 15 years site experience in same occupation for Non trained worker / 3 years site experience as a certified Fabricator for Trained worker		
Training Outcomes	**After completing this programme, participants will be able to:** • **Ensure completion of Joint Preparation activities for fabrication activity:-** ensure completion of Joint Preparation activities for fabrication activity • **Ensure completion of Joint Connection activities:-** to ensure completion of Joint connection activities • **Supervise heavy lifting of structural assemblies at construction sites:-** supervise heavy lifting of structural assemblies at construction sites. • **Execute erection works as per drawing/ specification:-** execute erection works as per drawing/ specification. • **Plan, arrange and manage resources for execution of relevant work:-** plan, arrange and manage resources for execution of relevant work • **Work effectively in a team to deliver desired results at the workplace:-** work effectively within a team to achieve the desired results. • **Manage workplace for safe and healthy work environment:-** maintain a healthy & safe working environment for the group of people working under an individual		

This course encompasses 6 out of 6 National Occupational Standards (NOS) of "Foreman Fabrication" Qualification Pack issued by "Construction Skill Development Council of India".

.	Module	Key Learning Outcomes	Equipment Required
1	**Introduction** **Theory Duration** (hh:mm) 08:00 **Practical Duration** (hh:mm) 00:00	• Introduction to role and responsibilities of the job role • how to read, write and understand basic English and knowledge of numeracy • organizational procedures for obtaining approvals and indent of materials • how to read and interpret technical details like drawings, specifications, charts, checklists etc. • units of measurement and conversion • career growth paths	• class room • White board • Computer • Projector • Charts and displays regarding MIG and SMAW welding
2	**Ensure completion of Joint Preparation activities for fabrication activity** **Theory Duration** (hh:mm) 56:00 **Practical Duration** (hh:mm) 92:00 **Corresponding NOS Code** CON/N1213	**Theory:** • *Drawings and calculations* 1. Knowledge and understanding to interpret relevant information from specifications and drawings and converting them into meaning full and simple sketches 2. Knowledge to perform the necessary arithmetic calculations required for fit up works 3. Knowledge of identifying and selecting correct material and tools for the required job as per the process adopted for the task • *Quality checking* 1. Through knowledge of various procedures like cleaning, cutting, grinding, beveling, scalloping, drilling, bolting, tack welding etc. for monitoring the above activities. 2. Knowledge of quality certifications of materials & their importance, checking quality certification marks like ISI etc. and confirming their authenticity, 3. Knowledge of various kinds of deformities found in different sections, their identification and the causes of such deformities. 4. Knowledge for conducting the following checks to ensure compliance with specifications, tolerances and drawings a. Measuring and marking for cutting, grinding, drilling, scalloping and beveling b. Checking dimensions and orientation post cutting,	

.	Module	Key Learning Outcomes	Equipment Required
		grinding, drilling, scalloping, welding & beveling c. Checking lifting accessories, tools and gears for proper working conditions d. Overseeing fabrication bed/ platform preparatory works and checking clamping/anchoring arrangements e. Oversee de-clamping and shifting procedures f. Checking root gaps g. Checking final fit up components for dimensions • *Operation and precautions for using equipment* 1. Detailed knowledge of the equipment used for the following operations (including, but not limited to components of the equipment, areas of operation, procedure for operation, safety precautions while using said equipment etc.) a. different measuring devices(used for dimensional and thermal measurement), their least count b. equipment used for gas cutting, its settings and adjustments and there results, working principles, range of operation c. various equipment used for grinding, their settings and adjustments and there results, working principles, range of operation, different accessories and consumables d. various equipment used for load lifting, working principles, range of operation, different accessories e. various equipment used for anchoring and clamping, their settings and adjustments and there results, working principles, range of operation, different accessories and consumables • knowledge for estimation of quantum of resources (man, material	

.	Module	Key Learning Outcomes	Equipment Required
		&machines) required for various fabrication activities **Practical:** Practice the skills involved in overseeing joint preparation activities by undertaking exercises that emphasis on the following: • identifying the specifications of materials and confirming the quality of the same through quality marks and through visual inspections • Interpret information as per assigned work and represent the same in form of clear instructions, sketches, instruction sheets etc. • conduct computations of dimensions for cutting while considering melting allowance • oversee the measurement activities and ensure final dimensions post cutting are as required in the drawing • work out requirements of material, machine and manpower required for smaller tasks • conduct checks for the following 1. scalloping and edge preparation 2. lifting accessories, tools and gears for proper working conditions 3. clamping arrangements before beginning the fit-up 4. joints for root gaps 5. location of tack weld for sufficiency	
3	**Ensure completion of Joint Connection activities** **Theory Duration** (hh:mm)	Theory: • Knowledge to read and understand the weld procedure specifications, shop drawings etc. to extract relevant information about location, positions, procedures and parameters to be adopted	•

.	Module	Key Learning Outcomes	Equipment Required
	120:00 **Practical Duration** (hh:mm) 178:00 **Corresponding NOS Code** CON/N1214	• Knowledge of different types of weld gauges, their application and use • Knowledge of various defects found in welding, their methods of rectifications, causes of these defects and precautions to avoid the same • Effect of welding on the dimensions of the structure, computation of deviation and permissible limits for the same in various structures • Knowledge to read and understand the bolting diagrams, specifications etc. to extract relevant information regarding the location, positions, procedures and parameters to be adopted while bolting • Different types of bolts, their application • Concept of grouping of bolts, checks required while performing group bolting • Knowledge of importance of washers • Different methods of bolting, their applications, pro and cons, precautions to be taken while following each method and quality checks for them. Practical: Practice the skills involved in overseeing joint preparation activities by undertaking exercises that emphasis on the following: • Interpret the information provided in the drawings and specifications to confirm : 1. Joints prepared have required root gap, bevel angle, 2. Size of drill holes and measure deviations 3. Measurement of bolt groups and measure deviations in grouping • Check complete welds for quality and note the defects observed • Perform dimensional check for the welded component	

.	Module	Key Learning Outcomes	Equipment Required
		• Compute roughly the materials and equipment required for the give task and arrange for the same • Oversee bolting operations and confirm their compliance to the procedure approved by the QA/QC department	
4	**Supervise heavy lifting of structural assemblies at construction sites** **Theory Duration** (hh:mm) 44:00 **Practical Duration** (hh:mm) 66:00 **Corresponding NOS Code** CON/N0726	Theory: - • Lifting and erection plan and schedule • Code of practice relevant to lifting operation. • Statutory requirements of lifting Equipments and operators for safe working. • Procedures of standard reporting and organizational • Load lifting capacity of equipment according to length and angle of Boom • Standard Hand signals for heavy load erection • Operation and use of communication Devices Demonstration/ practical: - • Select and use tools used in erection of precast members • ensure safe and desired functioning of lifting Equipments by conducting checks to the Equipments and trial run by competent personnel • carry out physical checks on components, assemblies and its locations where sling is to be attached for lifting • check slinging tools, lifting tools for their usability and specification according to load • ensure tightening of shackles, hooks, anchoring slings or belts during lifting of load and locking of sling at hook of crane • operate communication devices efficiently • provide signals to guide suspended loads to appropriate location under	**Hand tools** • Spud Wrenches. • Open-End Wrenches. • Crescent Wrenches. • Hammer • Nibbler • pliers **Power tools** • Impact Wrench • Drilling machine with bits • Electric screw gun • Electric hexa saw **Measuring tools** • Measuring tape • Plumb Bob • Spirit level • Chalks line • Try square • Water level **Equipments and Machinery** • Tower crane • Mobile crane • Forklift • Scissor lift • Hydraulic jacks • Electric Wire Rope Hoist • Electrical winch • Electrical chain hoist **Lifting accessories** • **Belts** • Slings • Wire ropes • Shackles • Spreader board

.	Module	Key Learning Outcomes	Equipment Required
		critical conditions such as in case of obstacles, imperceptible erection spots, dimly lighted conditions • Demonstrate standard hand signal methods while providing signals	• Chain • Link • Eye hook • Eye bolts • Bull dog grips • Clamp • socket **Safety instruments** • Safety Helmet • Safety goggles • Safety shoes • Safety belt • Cotton gloves • Ear plugs • Reflective jackets • Dust mask • Fire Prevention kit • Barricade tape • Safety Tags
5	**Execute erection works as per drawing/ specification** **Theory Duration** (hh:mm) 40:00 **Practical Duration** (hh:mm) 60:00 **Corresponding NOS Code** CON/N0727	Theory: - • Technical details of components of assembly • Standard sections of structural steel • Basic concept of different types of welding • Types of bolts based on diameters and functions • Types of joints; welded joints, bolt joints ,Revit joint • Gas cutting and grinding work • Methods of linear, areal and volumetric measurement • Simple geometry and conversion of units • Dimensional checks on erected assemblies • Relationship between load carrying capacity and angle of boom **Demonstration/ practical (D/P):** - • Carryout sequencing of key activities related to lifting and erection of components or assemblies • Read and interpret structural drawings to determine structural locations, orientations, resource required for executing erection work	**Hand tools** • Spud Wrenches. • Open-End Wrenches. • Crescent Wrenches. • Hammer • Nibbler • pliers **Power tools** • Impact Wrench • Drilling machine with bits • Electric screw gun • Electric hexa saw **Measuring tools** • Measuring tape • Plumb Bob • Spirit level • Chalks line • Try square • Water level **Equipments and Machinery** • Tower crane • Mobile crane • Forklift • Scissor lift

.	Module	Key Learning Outcomes	Equipment Required
		• Supervise lowering, placing and positioning of components or assemblies by providing instructions to the subordinates. • Carry out measurements as required to check alignment, elevation and orientation of the erected components or assemblies • Ensure placing of grout pad, cleaning of gaps for grouting and caulking as per requirement • Check lateral stability of part erected component and instruct to provide bracings, supports at required locations • Check all bolts connections used in structural assemblies	• Hydraulic jacks • Electric Wire Rope Hoist • Electrical winch • Electrical chain hoist **Lifting accessories** • Belts • Slings • Wire ropes • Shackles • Spreader board • Chain • Link • Eye hook • Eye bolts • Bull dog grips • Clamp • socket **Safety instruments** • Safety Helmet • Safety goggles • Safety shoes • Safety belt • Cotton gloves • Ear plugs • Reflective jackets • Dust mask • Fire Prevention kit • Barricade tape • Safety Tags
6	**Plan, arrange and manage resources for execution of relevant work** **Theory Duration** (hh:mm) 22:00 **Practical Duration** (hh:mm) 34:00 **Corresponding NOS Code** CON/N7001	**Theory: -** • Method of estimating qualities and determining quantum of work • Method of resource calculation and ascertaining timelines for assigned task • Method of submitting the requirement to seniors • Method of identifying priority and critical activity of a task • Method and technique on briefing team members about relevant work • Importance of daily productivity report and its preparation	

.	Module	Key Learning Outcomes	Equipment Required
		• Importance of daily attendance register and its preparation • Method of calculation of quantum of relevant work • Method of calculation of tools and material requirement • Method of optimization of available resources • Different check to evaluate progress and quality of relevant works • Organizing resources and quality checks to be performed as per requirement of the structural execution works **Demonstration/ Practical (D/P) :-** • Prepare work schedule as per planning • Determine quantum of work and calculate manpower required for work. • Submit manpower requirement to seniors and procure approval of the same. • Allocate resources for the work • Allocate material , equipment and tools to workmen and extract the work as per plan • Provide clear instruction to workman and extract work as per schedule. • Explain deviation in works and justify the same • Minimize wastage as per standard working method • Prepare format for daily labour attendance • Prepare format for daily productivity report and calculate the daily productivity for a given work	
7	**Work effectively in a team to deliver desired results at the workplace** **Theory Duration** (hh:mm) 10:00	**Theory:-** • Method of oral and written communication skills with co-workers, trade seniors while handling and carrying out visual checks on materials, tools and equipment • How to interpret scope of joint preparation and repair activities,	

.	Module	Key Learning Outcomes	Equipment Required
	Practical Duration (hh:mm) 14:00 **Corresponding NOS Code** CON/N8001	material/ tools handling by adhering to instructions or consulting with seniors • Method of reporting to seniors clearly and promptly • Seek necessary support and complete assigned tasks within stipulated time duration • Keep good relation and maintain well behavior with co-workers **Demonstration/ Practical (D/P) :-** The skills will be developed and practiced while carrying out following trade related activities 1. Selection of materials, tools or devices for defined purpose under 2. observing joint preparation, bolting and welding activities	
8	**Manage workplace for safe and healthy work environment** **Theory Duration** (hh:mm) 22:00 **Practical Duration** (hh:mm) 34:00 **Corresponding NOS Code** CON/N9002	**Theory: -** • The policies, procedures and protocol set up by the EHS Department With respect to Health , Safety and Environment at the respective construction site • Reporting procedures in case of hazards at site, accidents or emergency situations • Emergency response system • safe working practices for tools, tackles and equipment used in fabrication & erection work • The appropriate personal protective equipment to be used in fabrication & erection work • Monitor working in workplace keeping safety & health in mind **Demonstration/ Practical: -** • Demonstrate procedures to be followed for accident recording and reporting as per organizational and statuary requirements • Demonstrate response to emergency procedures / protocols • Demonstrate the use of fire protection Equipments for different type of fire Hazard • Demonstrate proper housekeeping at site	**Safety instruments** • Safety Helmet • Safety goggles • Safety shoes • Safety belt • Cotton gloves • Ear plugs • Reflective jackets • Dust mask • Fire Prevention kit • Barricade tape • Safety Tags

.	Module	Key Learning Outcomes	Equipment Required
		• Ensure safety and protection Equipments are properly installed for erection work • Identify hazards associated with fabrication & erection operations	
	Total Duration **Theory Duration 325:00** **Practical Duration 475:00**	**Hand tools** Stud Wrenches, Open-End Wrenches, Crescent Wrenches, Hammer, Nibbler, pliers **Power tools** Drilling machine with bits, Electric screw gun, Electric hexa saw Welding tools and accessories, Gas cutting tools and accessories **Measuring tools** Measuring tape, Plumb Bob, Spirit level, Chalks line, Try square Water level **Equipments and Machinery** Tower crane, Mobile crane, Forklift, Scissor lift, Hydraulic jacks, Electric Wire Rope Hoist, Electrical winch, Electrical chain hoist, derrick **Lifting accessories** **Belts,** Slings, Wire ropes, Shackles, Spreader board, Chain, Link , Eye hook, Eye bolts, Bull dog grips, Clamp, socket **Safety instruments** Safety Helmet , Safety goggles , Safety shoes , Safety belt, Cotton gloves, Ear plugs , Reflective jackets, Dust mask, Fire Prevention kit, Barricade tape, Safety Tags	

Grand Total Course Duration: **800 Hours, 0 Minutes**

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

Trainer Prerequisites for Job role: "Foreman Fabrication" mapped to Qualification Pack: "CON/Q1208", v1.0"

Sr. No.	Area	Details
1	**Description**	To deliver accredited training service, mapping to the curriculum detailed above, in accordance with the Qualification Pack "CON/Q1208".
2	**Personal Attributes**	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	**Minimum Educational Qualifications**	ITI/12th
4a	**Domain Certification**	Trainer/Assessor-80% in each NOS of Qualification Pack "MEP/Q0102" or "MEP/Q0104" and Lead trainer/Lead Assessors- 90% in each NOS of Qualification Pack "MEP/Q0101" or "MEP/Q0103"
4b	**Platform Certification**	Trainer/Assessor-50% in each NOS of Qualification Pack "MEP/Q0101" or "MEP/Q0103"& 80% overall, Lead trainer/ Lead Assessors- 50% in each NOS of Qualification Pack "MEP/Q0101" or "MEP/Q0103"and overall 90%
5	**Experience**	i. Technical Degree holder with minimum three years of Field experience and preferably two years of teaching experience or, ii. In case of a Diploma Holder five years of field experience and preferably two years of teaching experience or, iii. In case of ITI/12th pass minimum eight years of field experience and preferably two years of teaching Experience.

CRITERIA FOR ASSESSMENT OF TRAINEES

Job Role	Foreman Fabrication
Qualification Pack	CON/Q1208
Sector Skill Council	Construction

Guidelines for Assessment

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.

				Marks Allocation	
Assessment outcomes	Assessment Criteria for outcomes	**Total Mark**	**Out Of**	**Theory**	**Skills Practical**
CON/1213: Ensure completion of Joint Preparation activities for fabrication activity	PC1. identify sections and other materials required for fabrication works	**100**	3	2	1
	PC2. inspect and check the compliance of identified materials with work requirements		3	1	2
	PC3. check the quality certification marks on consumables and other tools and materials		3	2	1
	PC4. ensure that sections are free from deformities		3	1	2
	PC5. ensure surface cleaning is done prior to cutting of sections		3	1	2
	PC6. prepare hand sketches for subordinates		3	2	1
	PC7. provide clear instructions so as to carry out work efficiently		3	1	2
	PC8. ensure that measurements are carried out using appropriate instruments and devices		3	1	2
	PC9. check that markings for cutting are as per instructions and drawings		3	1	2
	PC10. ensure that allowance for melting of sections while cutting is considered in markings		3	1	2
	PC11. check the dimensions of the cut sections and identify the requirements of scalloping and edge preparation from shop drawings		5	2	3
	PC12. ensure that prepared edge and scallop is as per design requirements shown in drawings		5	2	3
	PC13. check the lifting accessories, tools and gears for proper working conditions		5	2	3
	PC14. oversee platform preparatory works undertaken by subordinates and provide instructions and guidance as and when necessary		5	2	3
	PC15. estimate and cross-check the requirements of materials, tools or other resources as provided by subordinates		3	1	2
	PC16. pass on the resource requirements to superiors as collected from subordinates		3	1	2
	PC17. oversee the heating procedure if required and continuously monitor the heating parameters to ensure optimal utilization of resources		5	2	3
	PC18. check clamping arrangements before beginning the fit-up		3	1	2
	PC19. inspect and check the locations identified by fitter for erection of temporary anchorages and instruct any change required in same		3	1	2

	PC20. check the joints for root gaps wherever applicable		3	1	2
	PC21. ensure that sections are placed in proper position and correct orientation		3	2	1
	PC22. check the location of tack weld for sufficiency		3	2	1
	PC23. inspect the tack welds and instruct for increase if required		3	1	2
	PC24. oversee the de-clamping of component to ensure safe working		3	1	2
	PC25. carry out checks for fitted components and sections to ensure that the dimensions of the components are complying with the drawings		3	1	2
	PC26. inform superiors about completion of work and initiate the quality checking procedures		3	1	2
	PC27. instruct subordinates to repair or remove any divergences found by quality inspectors as applicable		3	1	2
	PC28. inform respective concerned authorities for further commencing connection activities of components		3	1	2
	PC29. monitor observation of safe working practices as per organizational norms within workplace		3	1	2
	PC30. ensure that the work is completed in specified time with required quality		3	1	2
		Total	**100**	**40**	**60**
CON/1214: Ensure completion of Joint Connection activities	PC1. check the joints prepared for accurate dimensions and smoothness	**100**	6	2	4
	PC2. extract weld specifications from drawings and other technical documents		6	4	2
	PC3. interact and communicate with welders to identify and cause of improper welding		6	2	4
	PC4. measure the weld parameters using weld gauges		6	2	4
	PC5. identify other defects in welds such as undercut, lack of fusion, cracks, craters, spatters etc.		6	2	4
	PC6. suggest corrective measures for avoiding these defects in future		6	2	4
	PC7. consult with superiors for guidance in welding related matters if required		6	2	4
	PC8. conduct dimensional checks of the connected assemblies or components		6	2	4
	PC9. check bolt holes for their size, position, shape and grouping		6	2	4
	PC10. ensure that required amount of nuts, bolts and washers are available and have cleared quality inspection before commencing the work		11	6	5

	PC11. extract the bolting requirements from drawings, standards or specifications		11	6	5
	PC12. monitor observation of safe working practices as per organizational norms within workplace		6	2	4
	PC13. inform superiors about completion of work and initiate the quality checking procedures		6	2	4
	PC14. instruct subordinates to repair or remove any divergences found by quality inspectors as applicable		6	2	4
	PC15. inform respective concerned authorities for further commencing erection activities of components		6	2	4
		Total	**100**	**40**	**60**
CON/N0726: Supervise heavy lifting of structural assemblies at construction sites	PC1. brief subordinates about heavy lifting plan and safety control measures prior to start lifting	**100**	6.25	2.5	3.75
	PC2. allocate activities to specified subordinates as per their level of expertise		6.25	2.5	3.75
	PC3. analyze hazards related with lifting operations and report to concerned authority for any required action		12.5	5	7.5
	PC4. ensure safe and desired functioning of lifting equipments by conducting checks to the equipments and trial run by competent personnel		10	4	6
	PC5. carry out physical checks on components, assemblies and its locations where sling is to be attached for lifting		10	4	6
	PC6. check slinging tools, lifting tools for their usability and specification according to load		5	2	3
	PC7. ensure tightening of shackles, hooks, anchoring slings or belts during lifting of load		5	2	3
	PC8. ensure exact locking of sling at hook of crane		5	2	3
	PC9. ensure use of tag line of adequate length to control motion of the suspended load		5	2	3
	PC10. ensure motion of crane boom and load movement path is free from any static or mobile obstruction, adequately illuminated		5	2	3
	PC11. check and ensure erection of barrication surrounding heavy lifting location		5	2	3
	PC12. maintain clear line of vision with the operator and suspended load while providing signal		5	2	3
	PC13. operate communication devices efficiently		2.5	1	1.5
	PC14. provide verbal directions appropriately to equipment operator using communication devices		5	2	3
	PC15. adhere to standard hand signal methods while providing signals		5	2	3
	PC16. provide signals to guide suspended loads to appropriate location under critical conditions such as in		7.5	3	4.5

	case of obstacles, imperceptible erection spots, dimly lighted conditions				
		Total	**100**	**40**	**60**
CON/N0727: Execute erection works as per drawing/ specification	PC1. read and interpret structural drawings to determine structural locations, orientations, critical erection points and resource required for executing the works	**100**	7.5	3	4.5
	PC2. adhere to time line specified for completion of activities		5	2	3
	PC3. sequence key activities related to lifting and erection of components or assemblies		7.5	3	4.5
	PC4. manage required resources in coordination with superiors and other respective authorities		7.5	3	4.5
	PC5. plan and establish safe access to the point of erection		5	2	3
	PC6. obtain key survey markings at appropriate locations		5	2	3
	PC7. develop hand sketches and provide to subordinates as and when required		7.5	3	4.5
	PC8. supervise lowering, placing and positioning of components or assemblies by providing instructions to the subordinates to achieve desired outcome		5	2	3
	PC9. oversee erection activity and ensure the orientation of structural components and assemblies is within tolerance limit as per relevant drawings or instructions		7.5	3	4.5
	PC10. carry out measurements as required to check alignment, elevation and orientation of the erected components or assemblies		6.25	2.5	3.75
	PC11. check terminals, edges, holes and joints as per quality control checklists or guidelines		5	2	3
	PC12. check and confirm that all bolts used in the existing or precast components are of proper length, diameter and grade for the connections are as per erection drawing		5	2	3
	PC13. check the depth of threaded inserts in the existing structures or RCC precast units to ensure minimum acceptable engagement for the bolt threads		5	2	3
	PC14. ensure placing of grout pad, cleaning of gaps for grouting and caulking as per requirement		5	2	3
	PC15. check lateral stability of part erected component and instruct to provide bracings, supports at required locations		5	2	3

	PC16. offer for quality control checking by superior and other concerned authorities		2.5	1	1.5
	PC17. inform respective concerned authorities for future fabrication activities such as bolting, welding, grinding		3.75	1.5	2.25
	PC18. observe housekeeping and safety practices as per standard/ organizational norms during all concerned activities		5	2	3
		Total	**100**	**40**	**60**
CON/N7001: Plan, arrange and manage resources for execution of relevant work	PC1. determine quantum and nature of work under assigned activity	100	5	2	3
	PC2. calculate requirement of manpower for assigned activities		8	3	5
	PC3. submit manpower requirement to superiors		5	2	3
	PC4. allocate and extract work as per plan		8	3	5
	PC5. provide clear instructions to workmen for execution of work		8	3	5
	PC6. ensure optimum utilization of manpower resources		8	3	5
	PC7. record the daily labour attendance		8	3	5
	PC8. record the daily productivity report		8	3	5
	PC9. estimate quantity of assigned work		8	3	5
	PC10. estimate requirement for material, components and fixtures		8	3	5
	PC11. estimate equipment, tools and accessories required		8	3	5
	PC12. submit material, equipment and tool requirement to superiors		8	3	5
	PC13. allocate material , equipment and tools to workmen and extract the work as per plan		8	3	5
	PC14. provide clear instructions for optimized use of resources		8	3	5
		Total	**100**	**40**	**60**
CON/N8001: Work effectively in a team to deliver desired results at the workplace	PC1. pass on work related information/ requirement clearly to the team members	**100**	10	4	6
	PC2. inform co-workers and superiors about any kind of deviations from work		10	4	6
	PC3. address the problems effectively and report if required to immediate supervisor appropriately		20	8	12
	PC4. receive instructions clearly from superiors and respond effectively on same		10	4	6
	PC5. communicate to team members/subordinates for appropriate work technique and method		10	4	6
	PC6. seek clarification and advice as per requirement and applicability		10	4	6

	PC7. hand over the required material, tools tackles, equipment and work fronts timely to interfacing teams		15	6	9
	PC8. work together with co-workers in a synchronized manner		15	6	9
		Total	**100**	**40**	**60**
CON/N9002: Manage workplace for safe and healthy work environment	PC1. ensure proper housekeeping at workplace		5	2	3
	PC2. implement safe handling , stacking methods at workplace / store		5	2	3
	PC3. insure that health and safety plan is followed by all subordinates		5	2	3
	PC4. identify any hazard in workplace and notify them to appropriate authority		5	2	3
	PC5. ensure that all safety and protection installation are correctly placed & adequate		5	2	3
	PC6. ensure safe access is available at work place for movement of workers & materials		5	2	3
	PC7. ensure safe use of tools and tackles by the workmen as per applicability		5	2	3
	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		10	4	6
	PC9. maintain entrances & exit from confined spaces , excavated pits and other location in concurrence with safety parameters or instruction form safety personals.		5	2	3
	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		10	4	6

	• stooping work • evacuation • fire risks and safe exit procedures				
	PC11. follow procedures for accident recording and reporting as per organizational and statuary requirements		5	2	3
	PC12. ensure effective adherence to response to emergency procedures / protocols		7.5	3	4.5
	PC13. report any case of emergency / risks to the concern people at the construction site		7.5	3	4.5
	PC14. report any perceived risk hazards to the superiors / concerned EHS		7.5	3	4.5
	PC15. demonstrate the use of fire protection equipments for different type of fire hazard		7.5	3	4.5
	PC16. implement control measures to reduce risk & meet legal requirement as per organizational policies		5	2	3
		Total	**100**	**40**	**60**