Model Curriculum

1. Chargehand-Structural Erection

SECTOR: Construction
SUB-SECTOR: Real Estate and Infrastructure Construction
OCCUPATION: RIGGING
REF ID: CON/Q0705, V1.0
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: 'Chargehand-Structural Erection' QP No. 'CON/Q 0705 NSQF Level 4'

Date of Issuance: January 31st, 2017

Valid up to: August 14th, 2017

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

Authorised Signatory
(Construction Skill Development Council)

TABLE OF CONTENTS

Chargehand – Structural Erection

CURRICULUM / SYLLABUS

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

Program Name	**Chargehand – Structural Erection**		
Qualification Pack Name & Reference ID	CON/Q0705, v1.0		
Version No.	1.0	**Version Update Date**	14-08-2017
Pre-requisites to Training	Preferably 10th standard with 9 Years site experience in same occupation for Non-trained worker/ 3 years site experience as a certified Rigger Structural Erection for trained worker.		
Training Outcomes	**After completing this programme, participants will be able to:** • **Assemble, install and dismantle temporary material hoist and for material lifting at construction site:-**Planning and preparatory work before Erection work and temporary lifting arrangements • **Supervise lifting of heavy structural steel assemblies at construction sites :-** supervise lifting operations and carryout out tandem lifting • **Erect structural steel assemblies at construction sites:** check preparatory work before erection and erection of structural assemblies • **Work effectively in a team to deliver desired results at the workplace –** Introduction to team working and effective communication procedures to be followed at construction sites • **Plan and organize work to meet expected outcomes -** Prioritizing activities and organising resources to meet desired outcome • **Work according to personal health, safety and environment protocol at construction site:-** organizational safety norms and adopt healthy and safe work practices and housekeeping		

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

Sr. No.	Module	Key Learning Outcomes	Equipment Required
1	**Introduction** **Theory Duration** (hh:mm) 8:00 **Practical Duration** (hh:mm) 00:00	• Overview of construction sector and its importance • Lifting and erction work and job roles involved in rigging occupation • Job opportunities for Chargehand-structural erection in construction sector • Training session and training delivery plan • Roles and responsibilities of Chargehand – structural erection • Unit of measurement and their conversion • Basic knowledge of arithmetic calculation	Classroom Requirement 1. Classroom of 30 students capacity 2. Black/White board 3. Projector/LED Monitor 4. Computer 5. Trade specific charts and other teaching aids
2	**Assemble, install and dismantle temporary material hoist and for material lifting at construction site** **Theory Duration** (hh:mm) 48:00 **Practical Duration** (hh:mm) 107:00 **Corresponding NOS Code** CON/N0715	**Theory: -** • Standard Procedures for rigging work • Basic principles of measurement, geometry, arithmetic calculation in rigging work • Conversion of units of linear ,areal, volumetric Measurements • Drawing and sketches used in lifting and erction work • Types of lifting gears, Specifications and their load carrying capacity • Structural steel components used in lifting system • Safety checks for lifting gears for its usability. • Checks on work area before installation of lifting system Demonstration/ practical: - • Determine appropriate location for setting up brackets, masts or temporary lifting system, • Conduct erction of temporary lifting arrangements. • Develop sketches, diagrams for lifting System • Identify and use materials ,tools and lifting gears for load lifting • Perform dismantling of lifting arrangement • Conduct inspection of lifting arrangements(lubrication, tightening of components) • Carryout trial run for safe material lifting work.	**Hand tools** 1. Spud Wrenches. 2. Open-End Wrenches. 3. Crescent Wrenches. 4. Hammer 5. Nibbler 6. pliers **Power tools** 7. Impact Wrench 8. Drilling machine with bits 9. Electric screw gun 10. Electric hexa saw **Measuring tools** 11. Measuring tape 12. Plumb Bob 13. Spirit level 14. Chalks line 15. Try square 16. Water level **Equipments and Machinery** 17. Tower crane 18. Mobile crane 19. Forklift 20. Scissor lift 21. Hydraulic jacks 22. Electric Wire Rope Hoist 23. Electrical winch 24. Electrical chain hoist **Lifting accessories** **Belts** 25. Slings 26. Wire ropes 27. Shackles 28. Spreader board 29. Chain 30. Link 31. Eye hook

Sr. No.	Module	Key Learning Outcomes	Equipment Required
			32. Eye bolts 33. Bull dog grips 34. Clamp 35. socket **Safety instruments** 36. Safety Helmet 37. Safety goggles 38. Safety shoes 39. Safety belt 40. Cotton gloves 41. Ear plugs 42. Reflective jackets 43. Dust mask 44. Fire Prevention kit 45. Barricade tape **46.** Safety Tags
3	**Supervise lifting of heavy structural steel assemblies at construction sites** **Theory Duration** (hh:mm) 48:00 **Practical Duration** (hh:mm) (Recommend that this practical is done in industry set up) 120:00 **Corresponding NOS Code** CON/N0716	**Theory: -** • Lifting plans and schedules • Environmental conditions for lifting work • Preventive actions for erection work under adverse weather conditions • Factors affecting lifting operations • Different types of cranes, working mechanism and load carrying capacity • Operational specifications of different types of cranes • Working mechanism and its safe working load capacity of winch machines • Standard hand signaling procedures for lifting operations <u>Demonstration/ practical: -</u> • Check for safe working conditions and tightness of slings, belts, ropes, pulleys. • Monitor the angle between slings and tightness of locks • Supervise controlling the movement of suspended load by tag line or guy rope. • Provide the signals during various stages of lifting as per hand signaling guidelines • Carryout sequencing of activities related to tandem lifting operation • Evaluate the position of cranes and loads as per load lifting plan and safety norms for tandem lifting operations.	**Hand tools** 1. Spud Wrenches. 2. Open-End Wrenches. 3. Crescent Wrenches. 4. Hammer 5. Nibbler 6. pliers **Power tools** 7. Impact Wrench 8. Drilling machine with bits 9. Electric screw gun 10. Electric hexa saw **Measuring tools** 11. Measuring tape 12. Plumb Bob 13. Spirit level 14. Chalks line 15. Try square 16. Water level **Equipments and Machinery** 17. Tower crane 18. Mobile crane 19. Forklift 20. Scissor lift 21. Hydraulic jacks 22. Electric Wire Rope Hoist 23. Electrical winch 24. Electrical chain hoist **Lifting accessories** **Belts** 25. Slings 26. Wire ropes 27. Shackles

Sr. No.	Module	Key Learning Outcomes	Equipment Required
			28. Spreader board 29. Chain 30. Link 31. Eye hook 32. Eye bolts 33. Bull dog grips 34. Clamp 35. socket **Safety instruments** 36. Safety Helmet 37. Safety goggles 38. Safety shoes 39. Safety belt 40. Cotton gloves 41. Ear plugs 42. Reflective jackets 43. Dust mask 44. Fire Prevention kit 45. Barricade tape 46. Safety Tags
4	**Erect structural steel assemblies at construction sites** **Theory Duration** (hh:mm) 48:00 **Practical Duration** (hh:mm) 112:00 **Corresponding NOS Code** CON/N0717	**Theory: -** • Sequence of erction work as per work method statement. • Methodology of Checks on base of erection elements • Methodology of Checks on alignment of erected steel elements by measuring tools and instruments • Tolerance limits in erection of steel structural assemblies • Procedure of filling Checklists ,permits in erection work • Methodology of positioning of steel structural elements Demonstration/ practical (D/P): - • check for accessibility of load lifting Equipments in area of erection • Conduct check for availability of baseplates, connections and area of bearing for erection of structural steel assemblies • Install shoring, arcing and guying materials as per drawings • Carryout positioning of the steel assemblies to its accurate location • Carryout measurements and checks for alignment of steel components by measuring tools and instruments • Conduct checks for temporary supports and connections for stability before final connections • Carryout bolted connections ensuring specified torque and tension	**Hand tools** 1. Spud Wrenches. 2. Open-End Wrenches. 3. Crescent Wrenches. 4. Hammer 5. Nibbler 6. pliers **Power tools** 7. Impact Wrench 8. Drilling machine with bits 9. Electric screw gun 10. Electric hexa saw **Measuring tools** 11. Measuring tape 12. Plumb Bob 13. Spirit level 14. Chalks line 15. Try square 16. Water level **Equipments and Machinery** 17. Tower crane 18. Mobile crane 19. Forklift 20. Scissor lift 21. Hydraulic jacks 22. Electric Wire Rope Hoist 23. Electrical winch 24. Electrical chain hoist **Lifting accessories** **Belts**

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		• Perform check for survey marks and reference points and carryout measurement for fixing location of erection	25. Slings 26. Wire ropes 27. Shackles 28. Spreader board 29. Chain 30. Link 31. Eye hook 32. Eye bolts 33. Bull dog grips 34. Clamp 35. socket **Safety instruments** 36. Safety Helmet 37. Safety goggles 38. Safety shoes 39. Safety belt 40. Cotton gloves 41. Ear plugs 42. Reflective jackets 43. Dust mask 44. Fire Prevention kit 45. Barricade tape 46. Safety Tags
5	**Work effectively in a team to deliver desired results at the workplace** **Theory Duration** (hh:mm) 8:00 **Practical Duration** (hh:mm) (Recommend that this practical is done in industry set up) 18:00 **Corresponding NOS Code** CON/N8001	**Theory: -** • Different modes of communication and its usage • Importance of effective communication • Importance of team work • Risks of failure in teamwork • Coordination and interaction with co-workers • Method of written/ verbal reporting **Demonstration/ Practical (D/P) :-** The skills will be developed and practiced while carrying out following trade related activities in a repetitive predictable and familiar working condition • Demonstrate different types of communications among co-workers while erection operations • Demonstrate effective passing of information to sub-ordinate workmen about lifting plan and safe working methods for heavy lifting operations • Report to superior for completion of difficulties faced in rigging operations • Communicate Efficiently to the crane operator for placing the erected assembly at accurate location	
6	**Plan and organize work to meet expected outcomes** **Theory Duration** (hh:mm)	**Theory: -** • Scheduling and sequencing activities within defined scope of work	**Hand tools** 1. Spud Wrenches. 2. Open-End Wrenches. 3. Crescent Wrenches.

Sr. No.	Module	Key Learning Outcomes	Equipment Required
	8:00 **Practical Duration** (hh:mm) (Recommend that this practical is done in industry set up) 18:00 **Corresponding NOS Code** **CON/N8002**	• Method of estimation for necessary resources • Optimum use of resources and preparation of details of material consumption • Basic concept of productivity, sequencing of rigging work activities. • Upkeep, storing and stacking methods of tools, materials used for erection works • Requisition of resources, reporting for requirement of resources orally and in written to concerned authority **Demonstration/ Practical (D/P) :-** The skills will be developed and practiced while carrying out following trade related activities in a predictable and familiar working condition • List and arrange required resources before commencement of erection work. • Selection of materials, tools or tackles for defined purpose in an optimum manner for heavy erection work • Demonstrate planning and sequencing of erection work • Demonstrate allocation of manpower as per work requirement • Demonstrate Adherence to stipulated timelines for completion of erction of structural steel assemblies.	4. Hammer 5. Nibbler 6. pliers **Power tools** 7. Impact Wrench 8. Drilling machine with bits 9. Electric screw gun 10. Electric hexa saw **Measuring tools** 11. Measuring tape 12. Plumb Bob 13. Spirit level 14. Chalks line 15. Try square 16. Water level **Equipments and Machinery** 17. Tower crane 18. Mobile crane 19. Forklift 20. Scissor lift 21. Hydraulic jacks 22. Electric Wire Rope Hoist 23. Electrical winch 24. Electrical chain hoist **Lifting accessories Belts** 25. Slings 26. Wire ropes 27. Shackles 28. Spreader board 29. Chain 30. Link 31. Eye hook 32. Eye bolts 33. Bull dog grips 34. Clamp 35. socket **Safety instruments** 36. Safety Helmet 37. Safety goggles 38. Safety shoes 39. Safety belt 40. Cotton gloves 41. Ear plugs 42. Reflective jackets 43. Dust mask 44. Fire Prevention kit 45. Barricade tape 46. Safety Tags

Sr. No.	Module	Key Learning Outcomes	Equipment Required
7	**Work according to personal health, safety and environment protocol at construction site** **Theory Duration** (hh:mm) 12:00 **Practical Duration** (hh:mm) (Recommend that this practical is done in industry set up) 28:00 **Corresponding NOS Code** CON/N9001	**Theory: -** • Safety hazards at constructions sites and in rigging work • Reporting procedures in case of hazards and accidents • Emergency response system and evacuation procedures • Safe working practices in case of rigging work as per EHS guidelines • Personal protective Equipments in rigging work • Basic ergonomic principles • Safe Disposal of waste ,harmful and hazardous materials • Safety awareness programs like tool box talks, mock drills • Handling of construction materials, tools and tackles • Statutory compliance requirement related to working at height **Demonstration/ Practical: -** • Identify hazards,risks,safety violations at construction sites and in rigging work • Demonstrate emergency and evacuation response procedures • Demonstrate safe work practices while performing rigging operation • Use appropriate PPEs while performing rigging operations • Demonstrate safe disposal of wastes at construction site • Demonstrate handling of required tools, materials and Equipments involved in rigging work • Perform housekeeping practices during and after completion of erction work	1. Safety Helmet 2. Safety goggles 3. Safety shoes 4. Safety belt 5. Cotton gloves 6. Ear plugs 7. Reflective jackets 8. Dust mask 9. Fire Prevention kit 10. Barricade tape 11. Safety Tags
	Total Duration **Theory Duration** **180:00** **Practical Duration** **420:00**	**Unique Equipment Required:** Classroom Requirement Classroom of 30 students capacity, Black/White board, Projector/LED Monitor, Computer, Trade specific charts and other teaching aids Hand Tools Spud Wrenches, Open-End Wrenches, Crescent Wrenches,Sledge Hammer, Nibbler,pliers, tool kit Power tools welding tools and accessories, gas cutting tools and accessories Drill machine with bits, electric screw gun, electric hexa saw Measuring Instruments Measurement Tape, Chalk line/masons line, Water level, Spirit level, Plumb bob, try square consumables Paint, nail, welding rod, acetylene and oxygen ,screw,chalkpowder Equipments and machinery required Mobile crane, tower crane, electric hoist, scissor lift, forklift, hydraulic jack, derrick, Electrical winch, Electrical chain hoist Lifting accessories	

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		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: **600 Hours, 0 Minutes**
Recommended **378 hours of OJT**

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

Trainer Prerequisites for Job role: "Chargehand – Structural Erection" mapped to Qualification Pack: "CON/Q0705, 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/Q0705".
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	Chargehand - Structural Erection
Qualification Pack	CON/Q0705
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/N0715: Assemble, install and dismantle temporary material hoist and for material lifting at construction site	PC1. determine erection works requirements and feasibility to set up temporary lifting arrangements	**100**	13	4	9
	PC2. determine appropriate location for setting up brackets, masts or temporary lifting systems				
	PC3. identify materials, tools and lifting gears to be used to assemble lifting system according to load to be lifted				
	PC4. develop sketches, diagrams of proposed lifting systems which involve dimension of system, height level of erection, materials to be used in fabrication of the assembly, rigging tools and gears to be used within assembly, material movement path and clear distance to nearby locations		7	2	5
	PC5. obtain approval for erecting lifting system from concerned authority prior to assemble rigging arrangements		3	1	2
	PC6. check the stability of surface (ground or platform at height) where lifting system is to be installed		3	1	2
	PC7. use structural steel sections of appropriate dimensions and specifications to assemble the lifting system		3	1	2
	PC8. ensure proper welding or bolting of component joints within the lifting system		3	1	2
	PC9. ensure rigidity, alignment and orientation is as per approved plan or drawing		3	1	2
	PC10. use pulleys of appropriate specification at required positions		7	2	5
	PC11. provide adequate support from permanent structures to the lifting system by suitable means		7	2	5
	PC12. attach slings, wire ropes to the lifting systems in order to complete the arrangement		7	2	5
	PC13. use appropriate load lifting gears for the load lifting operations		7	2	5
	PC14. carry out trial run and ensure safe material lifting work under proper supervision		7	2	5
	PC15. ensure erection of safety signage, barricading as per work safety requirement		3	1	2
	PC16. carry out periodic inspections to the lifting arrangement as per requirement		3	1	2

	PC17. install lifting equipment of adequate capacity (SWL) considering the maximum planned load to be lifted		7	2	5
	PC18. ensure lubrication, tightening of lifting system components and equipment as and when required		3	1	2
	PC19. ensure shut down of lifting machine/ equipment post lifting work		3	1	2
	PC20. carry out safe dismantling of lifting arrangement after completion of works in proper sequence		7	2	5
	PC21. lower the dismantled parts safely and ensure proper storing and staking of dismantled parts		3	1	2
		Total	**100**	**30**	**70**
CON/N0716: Supervise lifting of heavy structural steel assemblies at construction sites	PC1. check and ensure the lifting route is free from obstacles such as live overhead electrical cables, service lines and close vicinity to existing structures or persons	**100**	7	2	5
	PC2. ensure area of operation (lifting, unloading) is safely marked, barricaded and safe access path is available to the lifting point				
	PC3. ensure that the lifting area is adequately illuminated and clear visibility can be maintained from lifting point to erection location				
	PC4. ensure loads to be lifted are placed appropriately at the point of lifting				
	PC5. confirm that the lifting equipments and their accessories under operation are in safe working condition		7	2	5
	PC6. check and ensure safe working conditions of lifting gears like shackles, pulleys, hooks, ropes, slings etc. prior to start lifting work				
	PC7. check for adequate tightness of slings, belts or ropes anchored to the load as per applicable standard procedure, prior to lifting				
	PC8. monitor lifting operation considering size and shape of the loads being lifted		3	1	2
	PC9. select and use specified lifting gears considering weight, shape and size of the load		3	1	2
	PC10. closely monitor angle between slings under tension and tightness of locks at attached points to ensure stability of the suspended load		7	2	5
	PC11. ensure elements or assemblies do not get damaged during lifting operations		3	1	2
	PC12. supervise controlling the movement of suspended loads using tag line or guy rope		7	2	5
	PC13. maintain clear line of vision with the equipment operator		3	1	2

	PC14. provide appropriate signals during various stages of lifting as per standard hand signaling guidelines		7	2	5
	PC15. seek assistance for signaling if load or operator is not visible from own location		3	1	2
	PC16. report to superior promptly and clearly in case of unsafe conditions, safety violations		3	1	2
	PC17. brief subordinate workmen about lifting plan and safe working methods prior to commencing heavy lifting operations		7	2	5
	PC18. ensure safe distance of equipments and objects as per agreed work plan from human and other near objects while carrying out lifting activity		3	1	2
	PC19. assess position of cranes and loads in order to keep accordance with load lifting plan, safety norms provided for conducting tandem lifting operations		7	2	5
	PC20. confirm full functional tests have been carried out of all power, transmission, control and safety systems of the equipments by competent personnel prior to the commencement of the lift		3	1	2
	PC21. confirm that the weather condition is favorable to heavy lifting activities		3	1	2
	PC22. prioritize and sequence activities related to tandem lifting operations		3	1	2
	PC23. monitor and control speed of lifting when multiple lifting equipments are engaged simultaneously		7	2	5
	PC24. keep close coordination with equipment operators and maintain synchronization throughout lifting activity		3	1	2
	PC25. maintain stable position of objects under suspension (while being lifted) as per standard practice by providing signals to the equipment operators		3	1	2
	PC26. guide objects to the desired locations and ensure their safe lowering to the specified positions		3	1	2
	PC27. execute task as per considerations, assumptions, limit of tolerance specified in applicable work methodology and safety control measures during heavy lifting work, report concerned personnel if otherwise		3	1	2
		Total	**100**	**30**	**70**
CON/N0717: Erect structural steel assemblies at construction sites	PC1. check for proper access is available to the location of erection	**100**	2	0.5	1
	PC2. check for survey marks and reference points and carry out necessary measurement to ascertain exact location of erection		3	1	2

	PC3. check for availability of base plates or other level correction provisions are provided to the base of erection as per requirement		3	1	2
	PC4. check for provisions for bolting, welding, post-tensioning connections are available as per drawing		3	1	2
	PC5. ensure designed area of bearing in the platform or support is available for efficient erection of the components		3	1	2
	PC6. check the area of erection for desired accessibility of load lifting equipments, otherwise report to concerned authority		3	1	2
	PC7. check for hazardous situations at erection site, such as presence of live electrical cables, absence of proper barricading, excessive wind speed and report it to the concerned authority promptly as per requirement		3	1	2
	PC8. check availability of all materials and support equipment (identified by the seniors and required to proceed with the work) and report any shortages		3	1	2
	PC9. install shoring, bracing and guying materials as directed by the foreman/ supervisor or specified by erection drawings and details considering local conditions		5	1.5	3
	PC10. pull, push and hold suspended structural steel assemblies/ components approximately to their exact location by hand or suitable means during lowering of load		5	1.5	3
	PC11. communicate efficiently to the signalman or operator for precise movements required to place the object at accurate location.		3	1	2
	PC12. supervise and monitor activities by subordinates in order to guide the units to their location		5	1.5	3
	PC13. place the steel assemblies/ components to its accurate location efficiently and make required adjustments as per erection requirement		5	1.5	3
	PC14. ensure proper alignment of the erected steel assembly/ component by carrying out required measurement and checks using appropriate measuring tools and instruments.		5	1.5	3
	PC15. confirm orientation of the erected assembly/ component as per instruction or drawings		5	1.5	3
	PC16. ensure installation of temporary connections using appropriate tools prior to final positioning of precast units		7	2	5
	PC17. check temporary supports and connections to ensure stabilization of units in its position until final connections are made		3	1	2

	PC18. tighten bolted connections to the specified tolerance and torque using appropriate torque wrench wherever required		7	2	5
	PC19. check bolt tightness in case of units having slotted connections		7	2	5
	PC20. install special steel washers to ensure that the specified tension has been developed in the bolt		3	1	2
	PC21. check location of shims, bearing pads for their proper positioning		3	1	2
	PC22. install expansion bolts using prescribed installation procedures and quality control specifications		3	1	2
	PC23. report superior for completion or difficulties faced promptly and efficiently		3	1	2
	PC24. report concerned authority promptly in case of any safety violation		3	1	2
	PC25. supervise observation of applicable safety practices by subordinates at workplace		2	0.5	1
		Total	**100**	**30**	**70**
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**	7	2	5
	PC2. inform co-workers and superiors about any kind of deviations from work		7	2	5
	PC3. address the problems effectively and report if required to immediate supervisor appropriately		10	3	7
	PC4. receive instructions clearly from superiors and respond effectively on same		7	2	5
	PC5. communicate to team members/subordinates for appropriate work technique and method		10	3	7
	PC6. seek clarification and advice as per requirement and applicability		7	2	5
	PC7. hand over the required material, tools tackles, equipment and work fronts timely to interfacing teams		27	8	19
	PC8. work together with co-workers in a synchronized manner		27	8	19
		Total	**100**	**30**	**70**
CON/N8002: Plan and organize work to meet expected outcomes	PC1. understand clearly the targets and timelines set by superiors	**100**	7	2	5
	PC2. plan activities as per schedule and sequence		7	2	5
	PC3. provide guidance to the subordinates to obtain desired outcome		10	3	7
	PC4. plan housekeeping activities prior to and post completion of work		7	2	5
	PC5. list and arrange required resources prior to commencement of work		10	3	7
	PC6. select and employ correct tools, tackles and equipment for completion of desired work		10	3	7

	PC7. complete the work with allocated resources		10	3	7
	PC8. engage allocated manpower in an appropriate manner		10	3	7
	PC9. use resources in an optimum manner to avoid any unnecessary wastage		10	3	7
	PC10. employ tools, tackles and equipment with care to avoid damage to the same		7	2	5
	PC11. organize work output, materials used, tools and tackles deployed,		7	2	5
	PC12. processes adopted to be in line with the specified standards and instructions		7	2	5
		Total	**100**	**30**	**70**
CON/N9001: Work according to personal health, safety and environment protocol at construction site	PC1. identify and report any hazards, risks or breaches in site safety to the appropriate authority	**100**	7	2	5
	PC2. follow emergency and evacuation procedures in case of accidents, fires, natural calamities		7	2	5
	PC3. follow recommended safe practices in handling construction materials, including chemical and hazardous material whenever applicable		10	3	7
	PC4. participate in safety awareness programs like Tool Box Talks, safety demonstrations, mock drills, conducted at site		7	2	5
	PC5. identify near miss , unsafe condition and unsafe act		7	2	5
	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 • Respiratory Protection (if required)		10	3	7
	PC7. handle all required tools, tackles , materials & equipment safely		7	2	5
	PC8. follow safe disposal of waste, harmful and hazardous materials as per EHS guidelines		7	2	5
	PC9. install and apply properly all safety equipment as instructed		13	4	9
	PC10. follow safety protocol and practices as laid down by site EHS department		13	4	9
	PC11. collect and deposit construction waste into identified containers before disposal, separate containers that may be needed for disposal of toxic or hazardous wastes		7	2	5
	PC12. apply ergonomic principles wherever required		7	2	5
		Total	**100**	**30**	**70**