



Model Curriculum

Rigger Piling

SECTOR: Construction
SUB-SECTOR: Real Estate and Infrastructure Construction
OCCUPATION: RIGGING
REF ID: CON/Q0704
NSQF LEVEL: 4



  

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: '**Rigger Piling**' QP No. '**CON/Q 0704 NSQF Level 4**'

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

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

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


Authorized Signatory
(Construction Skill Development Council of India)



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Rigger Piling

CURRICULUM / SYLLABUS

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

Program Name	Rigger Piling		
Qualification Pack Name & Reference ID. ID	CON/Q0704		
Version No.	1.0	Version Update Date	14-08-2017
Pre-requisites to Training	Preferably 5th standard with 5 years site experience in same occupation for Non Trained Worker/ 2 years site experience as a certified Khalasi (Assistant Rigger)		
Training Outcomes	<p>After completing this programme, participants will be able to:</p> <ul style="list-style-type: none"> • Assemble materials, equipments for bored cast in-situ concrete piling work: Assemble and erect piling tripod at specified location and Shift materials, install pumps, pipelines to facilitate pile boring works • Assist in conventional bored cast in situ concrete piling work: <ul style="list-style-type: none"> - Assist in boring activity, carry out flushing of borehole using bentonite slurry, shift stack reinforcement cages and lower them in to the borehole & carry out pile concreting work • Break RCC piles above cut-off level using pneumatic hammers: - Carry out preparatory works prior to pile breaking & operate jackhammer to break concrete. • Work effectively in a team to deliver desired results at the workplace: - Interact, communicate & support effectively with co-workers, superiors and sub-ordinates within the team and across interfacing teams to ensure effective execution of assigned task. • Plan and organize work to meet expected outcomes: - Prioritize work activities & organize desired resources prior to commencement of work to achieve desired results. • Work according to personal health, safety and environment protocol at construction site: - Importance of Health & Safety aspects & safety measures to be followed while working. 		

This course encompasses 6 out of 6 National Occupational Standards (NOS) of “Rigger Piling” Qualification Pack issued by “Construction Skill Development Council of India”.

Sr. No.	Module	Key Learning Outcomes	Equipment Required
1	<p>Introduction</p> <p>Theory Duration (hh:mm) 08:00</p>	<p>Theory:</p> <ul style="list-style-type: none"> • Introduction to the job roles • Major responsibilities of rigger piling. • Role description/functions and tasks performed by rigger piling. • Expected personal attributes from the job role • Brief description about course content, mode of learning and duration of course • Future possible progression and career development provisions for rigger piling. 	<p>Classroom Requirement</p> <ol style="list-style-type: none"> 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	<p>Assemble materials, Equipments for bored cast in-situ concrete piling work</p> <p>Theory Duration (hh:mm) 20:00</p> <p>Practical Duration (hh:mm) 92:00</p> <p>Corresponding NOS Code :- CON/N0712</p>	<p>Theory:</p> <ul style="list-style-type: none"> • Basic mathematical calculations, measurements, geometry & arithmetical calculations. • linear, areal, volumetric measurements and unit conversion • Basic concept & characteristics of different types of <ul style="list-style-type: none"> ✓ Soil ✓ Sand ✓ Rock ✓ Clay ✓ Shale ✓ Gravel ✓ Silt etc. • various material & components used in bored cast in situ concrete piling work • Knowledge of selection and use of hand tools for erection of tripod and piling work. • Assembling procedure of the piling tripod & made the suitable adjustments as per required in piling tripod • sequential steps for several activities of bored cast in situ concrete piling operations • Exact procedure of lifting, shifting and setting up winch at a specified location. • Familiar with the selection and use of rigging gears at piling tripod • Procedure for setting up pumps and hoses to route water and bentonite • Techniques for installation of piles on site. • Procedure for carrying out splicing and jointing works 	<p>Equipment required:</p> <ol style="list-style-type: none"> 1. Winch Machine 2. Bentonite mixing setup (comprising of mixing tank & pump) 3. Chisel 4. DMC rods 5. Dumpers 6. Transit mixer 7. Welding generator 8. Auger 9. Tremie pipe 10. Hopper 11. Compressor machine 12. Jack hammer <p>Safety instruments:</p> <ol style="list-style-type: none"> 1. Safety Helmets 2. Safety goggles 3. Hand gloves 4. Safety Shoes (Assorted size) 5. Ear Plug 6. Nose mask 7. Board of Safety instructions

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		<p><u>Practical:</u></p> <ul style="list-style-type: none"> • Check for safe using/working condition of rigging gears, components and tools to be used for assembling piling tripod • Carryout Cleaning of the rigging gears, components and tools to be used for assembling piling tripod • Carryout lifting/shifting and stacking of the required rigging gears, tripod components at specified location on site prior to erection of tripod. • Carryout assembling, erection and setting up tripod of desired height using specified components. • Carry out necessary linear measurement to the tripod to ensure its desired dimensions and location, using appropriate measuring instrument. • Select the appropriate method for shifting and assist in setting up winch at specified position • Demonstrate installation of pulley and necessary rigging gears to the tripod and ensure their proper locking as per norms. • Ensure lubrication of rigging gears under operation end ensure their smooth working • Carryout installation of wire rope/ pulling cable of the winch through the tripod as per instructions. • Use hand tools and rigging gears & fix/anchor the boring chisel and lock properly. • Carryout installation of pump to the sedimentation tanks or other locations as per work requirement under close supervision. • Shift required materials for executing piling operations such as bentonite bags, tremix pipe segments, pile casing etc. at specified location and stack properly. • Carryout laying of pipelines to the pump through proper routes as per instruction. • Ensure tightness of pipe joints so that the spillage of bentonite slurry pumped from tank can be controlled. 	

Sr. No.	Module	Key Learning Outcomes	Equipment Required
3	<p>Assist in conventional bored cast in situ concrete piling work</p> <p>Theory Duration (hh:mm) 24:00</p> <p>Practical Duration (hh:mm) 104:00</p> <p>Corresponding NOS Code :- CON/N0713</p>	<p>Theory:</p> <ul style="list-style-type: none"> • Sequence of boring activity in piling operation • Methodology of fixing guide casing in to specified position • Measuring alignment using measuring instruments. • Handling of Equipments, tools, rigging gears and materials required for piling operations • Methodology of Storing and stacking materials, tools, equipment's and accessories as per the standard practice used in bored cast in situ piling operation. • Brief concept of flushing work involved in bore piling and its importance • Physical properties of bentonite powder and its use in boring /flushing activities • Details to be checked in prefabricated reinforcement steel cages. • Appropriate tools & safe technique for locking reinforcement cages in its position in case of welded joints used for extending the cage • checks to be done during lowering of reinforcement cages in to borehole • sequences and relevance of flushing activity in piling operations • Methodology of joining and locking tremie pipes using hand tool • Importance of minimum clearance to be kept from bottom of tremie pipe and base of pile • Different kinds of pumps used in piling operation • Importance of consistency of bentonite slurry used during piling work • Importance of keeping the minimum quantity of concrete in the hopper/ funnel to make the assembly water tight • Flow ability/ workability of concrete used for pile construction work • Methodology of lifting and lowering of tremie pipe assembly & continue concreting work • Hand signalling/ gestures used during working with heavy equipment's 	<p>Equipment required:</p> <ol style="list-style-type: none"> 1. Piling rig 2. Bentonite mixing setup (comprising of mixing tank & pump) 3. Excavator 4. Chisel bailor 5. Dumpers 6. Transit mixer 7. Welding generator 8. Auger 9. Tremie pipe 10. Hopper 11. Compressor machine 12. Jack hammer <p>Safety instruments:</p> <ol style="list-style-type: none"> 1. Safety Helmets 2. Safety goggles 3. Hand gloves 4. Safety Shoes (Assorted size) 5. Ear Plug 6. Nose mask 7. Board of Safety instructions

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		<p><u>Practical:</u></p> <ul style="list-style-type: none"> • Carryout shifting/adjusting the location of casing pipe to ensure proceeding of drilling at exact pile location within specified tolerance • Carryout preparation of bentonite slurry. • Carryout out fixing of temporary guide casing into bored hole during initial boring. • Ensure vertical alignment of the casing and lock it in to its position by suitable means • Carryout measurements from the given reference survey points to ensure position of casing pipe • Monitor boring of pile by using chisel or rotary augers up to the specified depth. • Ensure circulation of bentonite slurry using reciprocating pumps/ vertical pumps into the borehole and from bore hole to the sedimentation tank. • Carryout lowering of reinforcement steel cage in to the borehole by crane/ manually. • Carryout flushing activity to remove loose soils. • Carryout joining of the tremie pipes of specified diameter as per instruction. • Carryout joining of tremie pipes one after another into the borehole under close supervision. • Carryout locking/ supporting the pipe assembly by suitable means using appropriate hand tools. • Carryout flushing of the bore by pumping bentonite slurry through the pipe assembly as per instruction. • Demonstrate use of lifting Equipments for shifting and stacking of prefabricated reinforcement steel cages at a specified location. • Check rigging gears and hand tools prior using or lifting activity • Demonstrate use of appropriate PPEs, rigging gears during lifting, shifting and lowering cages using load-lifting Equipments. • Stack the cages and check and ensure physical conditions of the cages are as per quality. 	

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		<ul style="list-style-type: none"> • Demonstrate handling, controlling movement and position of suspended cages prior and during lowering into pile borehole • Demonstrate fixing of cages in to the borehole and bracings; also provide supports to hold them in to position under close supervision in case of spot welding is required for joining/ extending them. • carry out required measurement to the cage & ensure that cage have reached to the bottom the borehole • Demonstrate installation of concreting hopper/ funnel to the tremie pipe and lock it properly at the position. • Ensure that the tremie pipe is adequately inserted in to the bed of concrete • Demonstrate removal of tremie pipe one by one starting from the top as the level of concrete rises upward • Carryout concreting up to the required level as per instruction • Ensure cleaning and greasing of tremie pipe segments, funnel etc. used for pile concreting work post concreting activity 	
4	<p>Break RCC piles above cut-off level using pneumatic hammers</p> <p>Theory Duration (hh:mm) 10:00</p> <p>Practical Duration (hh:mm) 44:00</p> <p>Corresponding NOS Code :- CON/N0714</p>	<p>Theory:</p> <ul style="list-style-type: none"> • Methodology of handling jackhammer during concrete breaking activity • selection and use of PPEs during concrete breaking activity • Basic concept of pneumatic systems • Process/ sequence of erection of working platforms • Process of attaching hose, jackhammer and air compressor machine • Checks performed to the jackhammer assembly. • Knowledge about the cut off level of pile. • Method of linear measurements using measuring instruments • knowledge about body posture, to be maintained while carrying out concrete breaking activity • Basic maintenance such as cleaning, lubrication etc. to be undertaken to the jackhammer <p>Practical:</p>	<p>Equipment required:</p> <ol style="list-style-type: none"> 1. Compressor machine 2. Jack hammer <p>Safety instruments:</p> <ol style="list-style-type: none"> 1. Safety Helmets 2. Safety goggles 3. Hand gloves 4. Safety Shoes (Assorted size) 5. Ear Plug 6. Nose mask

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		<ul style="list-style-type: none"> • Demonstrate use of appropriate PPEs prior to start concrete breaking activity • Check hose connecting hammer and air compressor for breaks, cracks prior and during breaking activity. • Carryout lubrication of the jackhammer and check for its safe working condition. • Carryout connection of air compressor to the hammer using hose. • check and ensure tightness of accessories fitted with the jackhammer and air compressor • Erect temporary working platforms as per work requirement • Erect barrication, safety signage surrounding the work location as per instruction. • Carry out necessary measurements from provided reference level. • Check for cut off level of pile. • Demonstrate lifting and shifting of the jackhammer to the specified location as per instruction • Carryout breaking of concrete with jackhammer up to specified level as per instruction. • Carryout changing of hammer bit or add lengths as depth of breaking increases. • Demonstrate start and stop the compressor attached to the jackhammer prior and post breaking activity • Maintain a correct body posture while lifting/shifting the hammer or breaking of concrete. • Carryout dismantling of staging/ working platform, isolating jackhammer, hose and compressor after completion of breaking activity. • Demonstrate Storage of platform, jackhammer, hose etc. at specified location. • Ensure cleaning of the location by disposing concrete debris to specified location. 	
5	Work effectively in a team to	<u>Theory:</u> <ul style="list-style-type: none"> • Types of communication. • Importance of effective communication 	

Sr. No.	Module	Key Learning Outcomes	Equipment Required
	<p>deliver desired results at the workplace</p> <p>Theory Duration (hh:mm) 04:00</p> <p>Practical Duration (hh:mm) 20:00</p> <p>Corresponding NOS Code :- CON/N8001</p>	<ul style="list-style-type: none"> • Team work and its importance • Risk of failure in Teamwork. • Applicable techniques of work. properties of materials used, Tools and tackles used, Safety Standard • Importance of healthy and cooperative Work environment among work. <p>Practical:</p> <ul style="list-style-type: none"> • Demonstrate Effective communication with team members for appropriate work technique and Method. • Demonstrate passing of work related Information to coworkers about deviation from work. • Demonstrate correct procedure handing over of the materials,tools&Tackles,Equipment to interfacing team 	
6	<p>Plan and organize work to meet expected outcomes</p> <p>Theory Duration (hh:mm) 02:00</p> <p>Practical Duration (hh:mm) 14:00</p> <p>Corresponding NOS Code :- CON/N8002</p>	<p>Theory:</p> <ul style="list-style-type: none"> • Follow the basic concept of productivity, sequence of working and implementation of safety and organizational norms while working • Optimization of resources • To plan activities within defined scope of work • Upkeep, storing and stacking methods of tools/ materials/ components used for domain specific works • Requisition of resources, reporting for requirement of resources orally and in written to concerned authority • Importance of housekeeping <p>Practical:</p> <ul style="list-style-type: none"> • Understand the target & set guidelines for completion of piling work • Prioritize all works/ activities in sequence • Optimum use of resources while performing task • Provide guidance to the subordinates to obtain desired outcome • Select and employ correct tools, tackles, components and equipment for completion of desired pre stressing work & complete 	

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		<p>the work with allocated resources in an optimum manner</p> <ul style="list-style-type: none"> Plan housekeeping activities prior to and post completion of work list and arrange required resources prior to commencement of rigger piling work 	
7	<p>Work according to personal health, safety and environment protocol at construction site</p> <p>Theory Duration (hh:mm) 12:00</p> <p>Practical Duration (hh:mm) 46:00</p> <p>Corresponding NOS Code :- CON/N9001</p>	<p>Theory:</p> <ul style="list-style-type: none"> Types of Hazards at construction site. Types of hazards involved in piling work Reporting procedures in case hazards, accidents and emergency situations Safe working practices in piling work Health and environments effect of construction material as per applicability. Storage and handling of hazardous material Environmental Protection Methods Housekeeping Methods and its importance Storage of different types of wastes including combustible noncombustible,hazardous,flammable wastes <p>Practical:</p> <ul style="list-style-type: none"> Demonstrate selection and use of appropriate PPEs in piling work Install and apply properly all safety equipment as instructed & all follow safety protocol and practices as laid down by site EHS department Identify and Report any hazards, risks or breaches in site safety to the appropriate authority. Demonstrate safe disposal of harmful and hazardous wastes Demonstrate use of fire extinguisher and standard practice of storing & stacking firefighting equipment's/ materials at work locations Demonstrate good housekeeping practices. 	<p>Safety instruments:</p> <ol style="list-style-type: none"> Safety Helmets Safety goggles Hand gloves Safety Shoes (Assorted size) Ear Plug Nose mask Board of Safety instructions

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		<ul style="list-style-type: none"> Apply ergonomic principles during piling work. 	
	<p>Total Duration</p> <p>Theory Duration 80:00 Hrs.</p> <p>Practical Duration 320:00 Hrs.</p>	<p><u>Classroom Requirement (for 30 students)</u></p> <p>Black/White board, marker, Projector/LED Monitor, Computer, Trade specific charts and other teaching aids</p> <p><u>Equipment required:</u></p> <p>Winch machine and accessories, Bentonite mixing setup (comprising of mixing tank & pump), tripod and pulley, DMC rods, chisels Transit mixer, Welding generator, Auger, soil buckets Tremie pipe, Hopper, Compressor machine, Jack hammer, wire ropes</p> <p><u>Safety instruments:</u></p> <p>Safety Helmets, Safety goggles, Hand gloves, Safety Shoes (Assorted size), Ear Plug, Nose mask, Board of Safety instructions</p>	

Grand Total Course Duration: **400 Hours, 0 Minutes**

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

Trainer Prerequisites for Job role: “Rigger Piling” mapped to Qualification Pack: “CON/Q0704, 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/Q0704”.
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/12 th pass minimum eight years of field experience and preferably two years of teaching Experience.



CRITERIA FOR ASSESSMENT OF TRAINEES

<u>Job Role</u>	Rigger Piling
<u>Qualification Pack</u>	CON/Q0704
<u>Sector Skill Council</u>	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.

Assessment outcomes	Assessment Criteria for outcomes	Marks Allocation			
		Total Mark	Out Of	Theory	Skills Practical
CON/N0712: Assemble materials, equipments for bored cast in-situ concrete piling work	PC1. check for safe condition and cleanliness of rigging gears, components and tools to be used for assembling piling tripod	100	5	1	4
	PC2. shift and stack required rigging gears, tripod components at specified location prior to erection of tripod as per instruction		5	1	4
	PC3. assemble, erect and set up tripod of desired height using specified components at specified location of boring		5	1	4
	PC4. carry out necessary linear measurement to the tripod to ensure its desired dimensions and location, using appropriate measuring instrument		5	1	4
	PC5. shift and assist in setting up winch at specified position		5	1	4
	PC6. secure and lock the tripod in to its location by using suitable locking means as per instruction		5	1	4
	PC7. install pulley and necessary rigging gears to the tripod and ensure their proper locking proper locking		10	2	8
	PC8. carry out lubrication of rigging gears under operation end ensure their smooth working		5	1	4
	PC9. install wire rope/ pulling cable of the winch through the tripod as per instruction		10	2	8
	PC10. anchor boring chisel and lock properly using appropriate hand tools and rigging gears		5	1	4
	PC11. check for access and safe condition of locations where pump to be set up or material to be stored		5	1	4
	PC12. shift and install pump to the sedimentation tanks or other locations as per work requirement under close supervision		5	1	4
	PC13. shift required materials for executing piling operations such as bentonite bags, tremie pipe segments, pile casing etc. and stack properly at specified location as per instruction		5	1	4
	PC14. shift, handle and stack flexible pipelines/ hose (cloth, PVC, etc.) at appropriate locations		5	1	4
	PC15. connect flexible pipelines to the pump and ensure tightness and lay them through proper routes as per instruction		5	1	4

	PC16. ensure tightness of pipe joints to ensure spillage of bentonite slurry pumped from tank		5	1	4
	PC17. expose pipelines to the specified locations (bore hole, sedimentation tank etc.) as per instruction		5	1	4
	PC18. maintain proper housekeeping at work locations		5	1	4
		Total	100	20	80
CON/N0713: Assist in conventional bored cast in situ concrete piling work	PC1. shift/ adjust the location of casing pipe to ensure proceeding of drilling at exact pile location within specified limit of tolerance	100	2.5	0.5	2
	PC2. spread bentonite powder in tank consisting water in order to obtain slurry under supervision		2.5	0.5	2
	PC3. cut channel from borehole to the sedimentation tanks in order to route overflowed slurry with bored mud/soil etc.		2.5	0.5	2
	PC4. erect barrication, signage as per work safety requirement surrounding the piling location such as piling tripod, bentonite tank etc		2.5	0.5	2
	PC5. lower temporary guide casing in to bored hole during initial boring as per instruction		2.5	0.5	2
	PC6. ensure vertical alignment of the casing and lock it in to its position by suitable means		2.5	0.5	2
	PC7. carry out necessary measurements from given reference survey points to ensure position of casing pipe		2.5	0.5	2
	PC8. monitor boring of pile by using chisel or rotary augers up to the specified depth		2.5	0.5	2
	PC9. ensure circulation of bentonite slurry using reciprocating pumps/ vertical pumps into the bore hole and from bore hole to the sedimentation tank		2.5	0.5	2
	PC10. facilitate lowering of reinforcement steel cage in to the borehole by crane/ manually		2.5	0.5	2
	PC11. carry out flushing activity in order to remove loose material out of the pit		2.5	0.5	2
	PC12. monitor concreting work maintaining all standard practices		2.5	0.5	2
	PC13. lower tremie pipes of specified diameter by joining them one after another in to the borehole under close supervision		2.5	0.5	2
	PC14. lock/ support the pipe assembly by suitable means using appropriate hand tools as per instruction		2.5	0.5	2
PC15. ensure minimum clearance has been maintained between bottom of the tremie pipe and pile base	2.5	0.5	2		

PC16. attach tremie head to the top of the pipe assembly and lock it properly	2.5	0.5	2
PC17. flush the bore by pumping bentonite slurry and discharging through the pipe assembly as per instruction	5	1	4
PC18. monitor inflow and outflow of bentonite slurry in order to ascertain completion of flushing activity	2.5	0.5	2
PC19. carry out cleaning and housekeeping of the work location as per instruction	2.5	0.5	2
PC20. shift and stack prefabricated reinforcement steel cages at specified locations using lifting equipments	2.5	0.5	2
PC21. place sleepers, blocks, pegs under the steel cages to hold them in to their positions against sliding	2.5	0.5	2
PC22. perform checks to the rigging gears and hand tools to ensure their safe working prior to using it lifting activity	5	1	4
PC23. use appropriate PPEs, rigging gears during lifting, shifting and lowering cages using load lifting equipments	2.5	0.5	2
PC24. check and ensure physical conditions of the cages are as per quality requirement after stacking the cage	5	1	4
PC25. check for cover blocks, binding of reinforcement and report to concerned person if any deviation observed	5	1	4
PC26. handle, control movement and position of suspended cages prior and during lowering in to pile borehole	2.5	0.5	2
PC27. lower the cages in to the borehole and place required bracings, supports to hold them in to position under close supervision in case of welding is required for joining/ extending them	2.5	0.5	2
PC28. carry out required measurement to the cage to ensure that they have reached to the bottom the borehole	5	1	4
PC29. attach concreting hopper/ funnel to the tremie pipe and lock it properly at the position prior to start concreting	2.5	0.5	2
PC30. pour adequate concrete to the hopper ensuring water tightness of the whole assembly	2.5	0.5	2
PC31. confirm that the tremie pipe is adequately inserted in to the bed of concrete	2.5	0.5	2
PC32. remove tremie pipe one by one starting from the top as the level of concrete rises upward	2.5	0.5	2

	PC33. communicate with concerned personnel, vehicle/ winch operator to achieve smooth working		2.5	0.5	2
	PC34. continue concreting up to the required level as per instruction and ensure continuous agitation of the whole pipe assembly throughout the concreting procedure		2.5	0.5	2
	PC35. ensure cleaning and greasing of tremie pipe segments, funnel etc. those are used for pile concreting work post concreting activity		2.5	0.5	2
		Total	100	20	80
CON/N0714: Break RCC piles above cut-off level using pneumatic hammers	PC1. checkhose connecting hammer and air compressor for breaks, cracks prior and during breaking activity and report to senior if such things observed	100	5	1	4
	PC2. check jackhammer for its safe working condition and required lubrications		5	1	4
	PC3. connect air compressor to the hammer using hose as per instruction		5	1	4
	PC4. check and ensure tightness of accessories fitted with the jackhammer and air compressor		5	1	4
	PC5. check location of the pile to be broken for safe access		5	1	4
	PC6. erect temporary working platforms as per work requirement		5	1	4
	PC7. erect barrication, safety signage surrounding the work location as per instruction		5	1	4
	PC8. Check for cut off level of pile and carry out necessary measurements from provided reference level		5	1	4
	PC9. lift and shift the jackhammer to the specified location		5	1	4
	PC10. hold the jackhammer in to proper position in order to break concrete		5	1	4
	PC11. press the jackhammer tightly against the pile concrete surface the trigger the same to start breaking				
	PC12. break concrete up to specified level and ensure embedded reinforcement bars do not get affected by hammer bit		15	3	12
	PC13. changes hammer bit or add lengths as depth of breaking increases		5	1	4
	PC14. carry out cleaning and lubrication of jackhammer as and when required		5	1	4
	PC15. start and stop the compressor attached to the jackhammer prior and post breaking activity		5	1	4
	PC16. use applicable PPEs while breaking concrete by hammer		5	1	4
	PC17. maintain proper body posture while shifting the hammer and breaking concrete by the same		5	1	4

	PC18. dismantle staging/ working platform, isolate jack hammer, hose and compressor after completion of breaking activity and store them at specified location		5	1	4
	PC19. ensure cleaning of the location of pile after completion of work by disposing concrete debris to specified location		5	1	4
		Total	100	20	80
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	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 and applicability		10	2	8
	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
			Total	100	20
CON/N8002: Plan and organize work to meet expected outcomes	PC1. understand clearly the targets and timelines set by superiors	100	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
		Total	100	20	80
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 authorities	100	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: <ul style="list-style-type: none"> • Head Protection (Helmets) • Ear protection • Fall Protection • Foot Protection • Face and Eye Protection • Hand and Body Protection • Respiratory Protection (if required) 		10	2	8
	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
			Total	100	20