



Rigger - Piling

QP Code: CON/Q0704

Version: 1.0

NSQF Level: 4

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CON/Q0704: Rigger - Piling

Brief Job Description

The job role is responsible for assisting in conventional cast in-situ piling works by erecting piling tripods, shifting required materials/ components and carrying out various activities as applicable to piling works

Personal Attributes

The individual is expected to be physically fit and should be able to work across various locations especially in marshy/ muddy locations. The individual should be able to implement and maintain safety practices. The individual should have good communication skills and shall be able to work within a team to handle various rigging tools and materials as applicable to conventional bored piling works.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. [CON/N0712: Assemble materials, equipments for bored cast in-situ concrete piling work](#)
2. [CON/N0713: Assist in conventional bored cast in situ concrete piling work](#)
3. [CON/N0714: Break RCC piles above cut-off level using pneumatic hammers](#)
4. [CON/N8001: Work effectively in a team to deliver desired results at the workplace](#)
5. [CON/N8002: Plan and organize work to meet expected outcomes](#)
6. [CON/N9001: Work according to personal health, safety and environment protocol at construction site](#)

Qualification Pack (QP) Parameters

Sector	Construction
Sub-Sector	Real Estate and Infrastructure construction
Occupation	Rigging
Country	India
NSQF Level	4
Credits	NA



Qualification Pack



Aligned to NCO/ISCO/ISIC Code	NCOâ€¢2004/7215.10
Minimum Educational Qualification & Experience	5th Class with 2-3 Years of experience as a certified Khalasi (Assistant Rigger) OR 5th Class with 3-5 Years of experience in case of a Non trained worker, in same occupation
Minimum Level of Education for Training in School	
Pre-Requisite License or Training	Recommended training period of 8-12 weeks as per QP of Rigger Piling
Minimum Job Entry Age	18 Years
Last Reviewed On	14/08/2015
Next Review Date	31/03/2022
Deactivation Date	31/03/2022
NSQC Approval Date	05/02/2018
Version	1.0
Reference code on NQR	2018/CON/CSDCI/02113
NQR Version	1.0



CON/N0712: Assemble materials, equipments for bored cast in-situ concrete piling work

Description

This unit describes the skills and knowledge required to assemble materials, equipments for bored cast in-situ concrete piling work

Scope

This unit/ task covers the following:

- Assemble and erect piling tripod at specified location
- Shift materials, install pumps, pipelines to facilitate pile boring works

Elements and Performance Criteria

Assemble and erect piling tripod at specified location

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

- PC1.** check for safe condition and cleanliness of rigging gears, components and tools to be used for assembling piling tripod
- PC2.** shift and stack required rigging gears, tripod components at specified location prior to erection of tripod as per instruction
- PC3.** assemble, erect and set up tripod of desired height using specified components at specified location of boring
- PC4.** carry out necessary linear measurement to the tripod to ensure its desired dimensions and location, using appropriate measuring instrument
- PC5.** shift and assist in setting up winch at specified position
- PC6.** secure and lock the tripod in to its location by using suitable locking means as per instruction
- PC7.** install pulley and necessary rigging gears to the tripod and ensure their proper locking proper locking
- PC8.** carry out lubrication of rigging gears under operation end ensure their smooth working
- PC9.** install wire rope/ pulling cable of the winch through the tripod as per instruction
- PC10.** anchor boring chisel and lock properly using appropriate hand tools and rigging gears

Shift materials,install pumps, pipelines to facilitate pile boring works

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

- PC11.** check for access and safe condition of locations where pump to be set up or material to be stored
- PC12.** shift and install pump to the sedimentation tanks or other locations as per work requirement under close supervision
- 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
- PC14.** shift, handle and stack flexible pipelines/ hose (cloth, PVC, etc.) at appropriate locations
- PC15.** connect flexible pipelines to the pump and ensure tightness and lay them through proper routes as per instruction



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- PC16.** ensure tightness of pipe joints to ensure spillage of bentonite slurry pumped from tank
- PC17.** expose pipelines to the specified locations (bore hole, sedimentation tank etc.) as per instruction
- PC18.** maintain proper housekeeping at work locations

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** standard procedure for construction rigging works
- KU2.** safety rules and regulation for handling and storing relevant rigging tools, equipment and materials
- KU3.** personal protection including the use of relevant safety gears & equipments
- KU4.** service request procedures for tools, materials and equipments
- KU5.** basic principles of measurement, geometry and arithmetic calculation
- KU6.** conversion of units of linear measurements
- KU7.** units of measurements
- KU8.** use of various material components used in bored cast in situ concrete piling work
- KU9.** selection and use of hand tools for erection of tripod and piling work
- KU10.** sequence of several activities of bored cast in situ concrete piling operations
- KU11.** assembling procedure and suitable adjustments to be made in piling tripod
- KU12.** procedure of shifting and setting up winch at specified location
- KU13.** selection and use of rigging gears at piling tripod
- KU14.** setting up pumps and hoses to route water and bentonite
- KU15.** installation techniques for piles
- KU16.** procedure for carrying out splicing and jointing works
- KU17.** basic concept of types of soil, sand, rock, clay, shale, gravel and silt types and characteristics

Generic Skills (GS)

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

- GS1.** write in one or more language, preferably in the local language of the site
- GS2.** read one or more language, preferably in the local language of the site
- GS3.** read various, sign boards, safety rules and safety tags , instructions related to exit routes during emergency at the workplace
- GS4.** speak in one or more language, preferably one of the local language at site
- GS5.** listen and follow instructions given by the superior
- GS6.** orally communicate with co-workers regarding support required to complete the respective work
- GS7.** decide whether his workplace is safe for working and also his work is not creating hazardous conditions for other



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- GS8.** decide whether the rigging gears, components and tools are clean and safe to be used for assembling piling tripod
- GS9.** plan work and organize required resource in coordination with team members and superiors
- GS10.** complete work as per agreed time and quality
- GS11.** ensure tightness of pipe joints to ensure spillage of bentonite slurry pumped from tank
- GS12.** resolve any conflict within the team
- GS13.** calculate the appropriate quantity of required materials as per applicability
- GS14.** carry out necessary linear measurement to the tripod to ensure its desired dimensions and location
- GS15.** optimize resources
- GS16.** minimize wastages
- GS17.** revert to superior for selection/sorting of materials
- GS18.** evaluate the complexity of the tasks to and seek assistance and support wherever required from the superior
- GS19.** identify and assess how violation of any safety norms may lead to accidents



Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Assemble and erect piling tripod at specified location</i>	12	48	-	-
PC1. check for safe condition and cleanliness of rigging gears, components and tools to be used for assembling piling tripod	1	4	-	-
PC2. shift and stack required rigging gears, tripod components at specified location prior to erection of tripod as per instruction	1	4	-	-
PC3. assemble, erect and set up tripod of desired height using specified components at specified location of boring	1	4	-	-
PC4. carry out necessary linear measurement to the tripod to ensure its desired dimensions and location, using appropriate measuring instrument	1	4	-	-
PC5. shift and assist in setting up winch at specified position	1	4	-	-
PC6. secure and lock the tripod in to its location by using suitable locking means as per instruction	1	4	-	-
PC7. install pulley and necessary rigging gears to the tripod and ensure their proper locking proper locking	2	8	-	-
PC8. carry out lubrication of rigging gears under operation end ensure their smooth working	1	4	-	-
PC9. install wire rope/ pulling cable of the winch through the tripod as per instruction	2	8	-	-
PC10. anchor boring chisel and lock properly using appropriate hand tools and rigging gears	1	4	-	-
<i>Shift materials,install pumps, pipelines to facilitate pile boring works</i>	8	32	-	-
PC11. check for access and safe condition of locations where pump to be set up or material to be stored	1	4	-	-



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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. shift and install pump to the sedimentation tanks or other locations as per work requirement under close supervision	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	1	4	-	-
PC14. shift, handle and stack flexible pipelines/ hose (cloth, PVC, etc.) at appropriate locations	1	4	-	-
PC15. connect flexible pipelines to the pump and ensure tightness and lay them through proper routes as per instruction	1	4	-	-
PC16. ensure tightness of pipe joints to ensure spillage of bentonite slurry pumped from tank	1	4	-	-
PC17. expose pipelines to the specified locations (bore hole, sedimentation tank etc.) as per instruction	1	4	-	-
PC18. maintain proper housekeeping at work locations	1	4	-	-
NOS Total	20	80	-	-



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National Occupational Standards (NOS) Parameters

NOS Code	CON/N0712
NOS Name	Assemble materials, equipments for bored cast in-situ concrete piling work
Sector	Construction
Sub-Sector	Real Estate and Infrastructure construction
Occupation	Rigging
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	14/08/2015
Next Review Date	31/03/2022
NSQC Clearance Date	05/02/2018



CON/N0713: Assist in conventional bored cast in situ concrete piling work

Description

This unit describes the skills and knowledge required to assist in conventional bored cast in situ concrete piling work

Scope

This unit/ task covers the following:

- 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

Elements and Performance Criteria

Assist in boring activity

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

- PC1.** shift/ adjust the location of casing pipe to ensure proceeding of drilling at exact pile location within specified limit of tolerance
- PC2.** spread bentonite powder in tank consisting water in order to obtain slurry under supervision
- PC3.** cut channel from borehole to the sedimentation tanks in order to route overflowed slurry with bored mud/soil etc
- PC4.** erect barricade, signage as per work safety requirement surrounding the piling location such as piling tripod, bentonite tank etc
- PC5.** lower temporary guide casing in to bored hole during initial boring as per instruction
- PC6.** ensure vertical alignment of the casing and lock it in to its position by suitable means
- PC7.** carry out necessary measurements from given reference survey points to ensure position of casing pipe
- PC8.** monitor boring of pile by using chisel or rotary augers up to the specified depth
- PC9.** ensure circulation of bentonite slurry using reciprocating pumps/ vertical pumps into the bore hole and from bore hole to the sedimentation tank
- PC10.** facilitate lowering of reinforcement steel cage in to the borehole by crane/ manually
- PC11.** carry out flushing activity in order to remove loose material out of the pit
- PC12.** monitor concreting work maintaining all standard practices

Carry out flushing of borehole using bentonite slurry

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

- PC13.** lower tremie pipes of specified diameter by joining them one after another in to the borehole under close supervision
- PC14.** lock/ support the pipe assembly by suitable means using appropriate hand tools as per instruction
- PC15.** ensure minimum clearance has been maintained between bottom of the tremie pipe and pile base



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- PC16.** attach tremie head to the top of the pipe assembly and lock it properly
- PC17.** flush the bore by pumping bentonite slurry and discharging through the pipe assembly as per instruction
- PC18.** monitor inflow and outflow of bentonite slurry in order to ascertain completion of flushing activity
- PC19.** carry out cleaning and housekeeping of the work location as per instruction

Shift stack reinforcement cages and lower them in to the borehole

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

- PC20.** shift and stack prefabricated reinforcement steel cages at specified locations using lifting equipments
- PC21.** place sleepers, blocks, pegs under the steel cages to hold them in to their positions against sliding
- PC22.** perform checks to the rigging gears and hand tools to ensure their safe working prior to using it lifting activity
- PC23.** use appropriate PPEs, rigging gears during lifting, shifting and lowering cages using load lifting equipments
- PC24.** check and ensure physical conditions of the cages are as per quality requirement after stacking the cage
- PC25.** check for cover blocks, binding of reinforcement and report to concerned person if any deviation observed
- PC26.** handle, control movement and position of suspended cages prior and during lowering in to pile borehole
- 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
- PC28.** carry out required measurement to the cage to ensure that they have reached to the bottom the borehole

Carry out pile concreting work

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

- PC29.** attach concreting hopper/ funnel to the tremie pipe and lock it properly at the position prior to start concreting
- PC30.** pour adequate concrete to the hopper ensuring water tightness of the whole assembly
- PC31.** confirm that the tremie pipe is adequately inserted in to the bed of concrete
- PC32.** remove tremie pipe one by one starting from the top as the level of concrete rises upward
- PC33.** communicate with concerned personnel, vehicle/ winch operator to achieve smooth working
- PC34.** continue concreting up to the required level as per instruction and ensure continuous agitation of the whole pipe assembly throughout the concreting procedure
- PC35.** ensure cleaning and greasing of tremie pipe segments, funnel etc. those are used for pile concreting work post concreting activity

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** standard procedure for construction rigging works



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- KU2.** safety rules and regulation for handling and storing relevant rigging tools, equipment and materials
- KU3.** personal protection including the use of relevant safety gears & equipments
- KU4.** service request procedures for tools, materials and equipments
- KU5.** basic principles of measurement, geometry and arithmetic calculation
- KU6.** conversion of units of linear measurements
- KU7.** units of measurements
- KU8.** sequence of boring activity in piling operation
- KU9.** equipments, tools and rigging gears required for piling operations
- KU10.** how to align guide casing in to specified position
- KU11.** how to measure alignment using measuring instruments
- KU12.** standard practice of storing and stacking materials, tools, equipments and accessories used in bored cast in situ piling operation
- KU13.** brief concept of flushing work involved in bore piling and its importance
- KU14.** physical properties of bentonite powder and its use in boring /flushing activities
- KU15.** checks to be carried out in prefabricated reinforcement steel cages
- KU16.** material handling procedures while working with lifting equipments
- KU17.** safe technique and use of tools for locking reinforcement cages in its position in case of welded joints used for extending the cage
- KU18.** checks to be done during lowering of reinforcement cages in to borehole
- KU19.** sequence and relevance of flushing activity in piling operations
- KU20.** how to join and lock tremie pipes using hand tools
- KU21.** minimum clearance to be kept from bottom of tremie pipe and base of pile
- KU22.** functions of different kinds of pumps used in piling operation
- KU23.** consistency of bentonite slurry to be maintained during piling work
- KU24.** minimum quantity of concrete to be kept in the hopper/ funnel to make the assembly water tight
- KU25.** flowability/ workability of concrete to be used for pile construction
- KU26.** how to continue concreting work by repetitive lifting and lowering of tremie assembly
- KU27.** basic procedure of hand signaling during working with heavy equipments

Generic Skills (GS)

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

- GS1.** write in one or more language, preferably in the local language of the site
- GS2.** read one or more language, preferably in the local language of the site
- GS3.** read various, sign boards, safety rules and safety tags , instructions related to exit routes during emergency at the workplace
- GS4.** speak in one or more language, preferably one of the local language at site
- GS5.** listen and follow instructions given by the superior



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- GS6.** orally communicate with co-workers regarding support required to complete the respective work
- GS7.** decide whether his workplace is safe for working and also his work is not creating hazardous conditions for other
- GS8.** decide whether the preparatory work is completed prior to piling works
- GS9.** plan work and organize required resource in coordination with team members and superiors
- GS10.** complete work as per agreed time and quality
- GS11.** make suitable adjustments for vertical alignment of casing
- GS12.** resolve any conflict within the team
- GS13.** calculate the appropriate quantity of required materials as per applicability
- GS14.** optimize resources
- GS15.** minimize wastages
- GS16.** revert to superior for selection/sorting of materials
- GS17.** evaluate the complexity of the tasks to and seek assistance and support wherever required from the superior
- GS18.** identify and assess how violation of any safety norms may lead to accidents



Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Assist in boring activity</i>	6	24	-	-
PC1. shift/ adjust the location of casing pipe to ensure proceeding of drilling at exact pile location within specified limit of tolerance	0.5	2	-	-
PC2. spread bentonite powder in tank consisting water in order to obtain slurry under supervision	0.5	2	-	-
PC3. cut channel from borehole to the sedimentation tanks in order to route overflowed slurry with bored mud/soil etc	0.5	2	-	-
PC4. erect barrication, signage as per work safety requirement surrounding the piling location such as piling tripod, bentonite tank etc	0.5	2	-	-
PC5. lower temporary guide casing in to bored hole during initial boring as per instruction	0.5	2	-	-
PC6. ensure vertical alignment of the casing and lock it in to its position by suitable means	0.5	2	-	-
PC7. carry out necessary measurements from given reference survey points to ensure position of casing pipe	0.5	2	-	-
PC8. monitor boring of pile by using chisel or rotary augers up to the specified depth	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	0.5	2	-	-
PC10. facilitate lowering of reinforcement steel cage in to the borehole by crane/ manually	0.5	2	-	-
PC11. carry out flushing activity in order to remove loose material out of the pit	0.5	2	-	-
PC12. monitor concreting work maintaining all standard practices	0.5	2	-	-
<i>Carry out flushing of borehole using bentonite slurry</i>	4	16	-	-



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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. lower tremie pipes of specified diameter by joining them one after another in to the borehole under close supervision	0.5	2	-	-
PC14. lock/ support the pipe assembly by suitable means using appropriate hand tools as per instruction	0.5	2	-	-
PC15. ensure minimum clearance has been maintained between bottom of the tremie pipe and pile base	0.5	2	-	-
PC16. attach tremie head to the top of the pipe assembly and lock it properly	0.5	2	-	-
PC17. flush the bore by pumping bentonite slurry and discharging through the pipe assembly as per instruction	1	4	-	-
PC18. monitor inflow and outflow of bentonite slurry in order to ascertain completion of flushing activity	0.5	2	-	-
PC19. carry out cleaning and housekeeping of the work location as per instruction	0.5	2	-	-
<i>Shift stack reinforcement cages and lower them in to the borehole</i>	6.5	26	-	-
PC20. shift and stack prefabricated reinforcement steel cages at specified locations using lifting equipments	0.5	2	-	-
PC21. place sleepers, blocks, pegs under the steel cages to hold them in to their positions against sliding	0.5	2	-	-
PC22. perform checks to the rigging gears and hand tools to ensure their safe working prior to using it lifting activity	1	4	-	-
PC23. use appropriate PPEs, rigging gears during lifting, shifting and lowering cages using load lifting equipments	0.5	2	-	-
PC24. check and ensure physical conditions of the cages are as per quality requirement after stacking the cage	1	4	-	-



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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC25. check for cover blocks, binding of reinforcement and report to concerned person if any deviation observed	1	4	-	-
PC26. handle, control movement and position of suspended cages prior and during lowering in to pile borehole	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	0.5	2	-	-
PC28. carry out required measurement to the cage to ensure that they have reached to the bottom the borehole	1	4	-	-
<i>Carry out pile concreting work</i>	3.5	14	-	-
PC29. attach concreting hopper/ funnel to the tremie pipe and lock it properly at the position prior to start concreting	0.5	2	-	-
PC30. pour adequate concrete to the hopper ensuring water tightness of the whole assembly	0.5	2	-	-
PC31. confirm that the tremie pipe is adequately inserted in to the bed of concrete	0.5	2	-	-
PC32. remove tremie pipe one by one starting from the top as the level of concrete rises upward	0.5	2	-	-
PC33. communicate with concerned personnel, vehicle/ winch operator to achieve smooth working	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	0.5	2	-	-
PC35. ensure cleaning and greasing of tremie pipe segments, funnel etc. those are used for pile concreting work post concreting activity	0.5	2	-	-
NOS Total	20	80	-	-



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National Occupational Standards (NOS) Parameters

NOS Code	CON/N0713
NOS Name	Assist in conventional bored cast in situ concrete piling work
Sector	Construction
Sub-Sector	Real Estate and Infrastructure construction
Occupation	Rigging
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	14/08/2015
Next Review Date	31/03/2022
NSQC Clearance Date	05/02/2018



CON/N0714: Break RCC piles above cut-off level using pneumatic hammers

Description

This unit describes the skills and knowledge required to break RCC piles above cutoff level using pneumatic hammers

Scope

This unit/ task covers the following:

- Carry out preparatory works prior to pile breaking
- Operate jackhammer to break concrete

Elements and Performance Criteria

Carry out preparatory works prior to pile breaking

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

- PC1.** check hose connecting hammer and air compressor for breaks, cracks prior and during breaking activity and report to senior if such things observed
- PC2.** check jackhammer for its safe working condition and required lubrications
- PC3.** connect air compressor to the hammer using hose as per instruction
- PC4.** check and ensure tightness of accessories fitted with the jackhammer and air compressor
- PC5.** check location of the pile to be broken for safe access
- PC6.** erect temporary working platforms as per work requirement
- PC7.** erect barricade, safety signage surrounding the work location as per instruction
- PC8.** check for cut off level of pile and carry out necessary measurements from provided reference level

Operate jackhammer to break concrete

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

- PC9.** lift and shift the jackhammer to the specified location
- PC10.** hold the jackhammer in to proper position in order to break concrete
- 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
- PC13.** changes hammer bit or add lengths as depth of breaking increases
- PC14.** carry out cleaning and lubrication of jackhammer as and when required
- PC15.** start and stop the compressor attached to the jackhammer prior and post breaking activity
- PC16.** use applicable PPEs while breaking concrete by hammer



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- PC17.** maintain proper body posture while shifting the hammer and breaking concrete by the same
- PC18.** dismantle staging/ working platform, isolate jack hammer, hose and compressor after completion of breaking activity and store them at specified location
- PC19.** ensure cleaning of the location of pile after completion of work by disposing concrete debris to specified location

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** standard procedure for construction rigging works
- KU2.** safety rules and regulation for handling and storing relevant rigging tools, equipment and materials
- KU3.** personal protection including the use of relevant safety gears & equipments
- KU4.** service request procedures for tools, materials and equipments
- KU5.** how to handle jackhammer during concrete breaking activity
- KU6.** basic concept of pneumatic systems
- KU7.** process of erection of working platforms
- KU8.** process of attaching hose, jackhammer and air compressor machine
- KU9.** checks to be performed to the jackhammer assembly
- KU10.** selection and use of PPEs during concrete breaking activity
- KU11.** cut off level of pile
- KU12.** method of linear measurements using measuring instruments
- KU13.** body posture to be maintained while carrying out concrete breaking activity
- KU14.** basic maintenance (cleaning, lubrication etc.) to be undertaken to the jackhammer

Generic Skills (GS)

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

- GS1.** write in one or more language, preferably in the local language of the site
- GS2.** read one or more language, preferably in the local language of the site
- GS3.** read various, sign boards, safety rules and safety tags , instructions related to exit routes during emergency at the workplace
- GS4.** speak in one or more language, preferably one of the local language at site
- GS5.** listen and follow instructions given by the superior
- GS6.** orally communicate with co-workers regarding support required to complete the respective work
- GS7.** decide whether his workplace is safe for working and also his work is not creating hazardous conditions for other
- GS8.** decide whether the preparatory work is completed prior to piling works
- GS9.** plan work and organize required resource in coordination with team members and superiors



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- GS10.** complete work as per agreed time and quality
- GS11.** ensure tightness of accessories fitted with the jackhammer and air compressor
- GS12.** resolve any conflict within the team
- GS13.** determine quantity of material required for piling works
- GS14.** optimize resources
- GS15.** minimize wastages
- GS16.** revert to superior for selection/sorting of materials
- GS17.** evaluate the complexity of the tasks to and seek assistance and support wherever required from the superior
- GS18.** identify and assess how violation of any safety norms may lead to accidents



Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Carry out preparatory works prior to pile breaking</i>	8	32	-	-
PC1. check hose connecting hammer and air compressor for breaks, cracks prior and during breaking activity and report to senior if such things observed	1	4	-	-
PC2. check jackhammer for its safe working condition and required lubrications	1	4	-	-
PC3. connect air compressor to the hammer using hose as per instruction	1	4	-	-
PC4. check and ensure tightness of accessories fitted with the jackhammer and air compressor	1	4	-	-
PC5. check location of the pile to be broken for safe access	1	4	-	-
PC6. erect temporary working platforms as per work requirement	1	4	-	-
PC7. erect barrication, safety signage surrounding the work location as per instruction	1	4	-	-
PC8. check for cut off level of pile and carry out necessary measurements from provided reference level	1	4	-	-
<i>Operate jackhammer to break concrete</i>	12	48	-	-
PC9. lift and shift the jackhammer to the specified location	1	4	-	-
PC10. hold the jackhammer in to proper position in order to break concrete	1	4	-	-
PC11. press the jackhammer tightly against the pile concrete surface the trigger the same to start breaking	1	6	-	-
PC12. break concrete up to specified level and ensure embedded reinforcement bars do not get affected by hammer bit	2	6	-	-



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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. changes hammer bit or add lengths as depth of breaking increases	1	4	-	-
PC14. carry out cleaning and lubrication of jackhammer as and when required	1	4	-	-
PC15. start and stop the compressor attached to the jackhammer prior and post breaking activity	1	4	-	-
PC16. use applicable PPEs while breaking concrete by hammer	1	4	-	-
PC17. maintain proper body posture while shifting the hammer and breaking concrete by the same	1	4	-	-
PC18. dismantle staging/ working platform, isolate jack hammer, hose and compressor after completion of breaking activity and store them at specified location	1	4	-	-
PC19. ensure cleaning of the location of pile after completion of work by disposing concrete debris to specified location	1	4	-	-
NOS Total	20	80	-	-



Qualification Pack



National Occupational Standards (NOS) Parameters

NOS Code	CON/N0714
NOS Name	Break RCC piles above cut-off level using pneumatic hammers
Sector	Construction
Sub-Sector	Real Estate and Infrastructure construction
Occupation	Rigging
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	14/08/2015
Next Review Date	31/03/2022
NSQC Clearance Date	05/02/2018



CON/N8001: Work effectively in a team to deliver desired results at the workplace

Description

This unit describes the skills and knowledge required to work effectively within a team to achieve the desired results

Scope

The scope covers the following:

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

Elements and Performance Criteria

Interact and communicate in effective and conclusive manner

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

- PC1.** pass on work related information/ requirement clearly to the team members
- PC2.** inform co-workers and superiors about any kind of deviations from work
- PC3.** address the problems effectively and report if required to immediate supervisor appropriately
- PC4.** receive instructions clearly from superiors and respond effectively on the same
- PC5.** communicate to team members/subordinates for appropriate work technique and method
- PC6.** seek clarification and advice as per the requirement and applicability

Support co-workers to execute project requirements

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

- PC7.** hand over the required material, tools tackles, equipment and work fronts timely to interfacing teams
- PC8.** work together with co-workers in a synchronized manner

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

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



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- KU6.** different activities within his work area where an interaction with other workers is required
- KU7.** applicable techniques of work, properties of materials used, tools and tackles used, safety standards that co-workers might need as per the requirement
- KU8.** importance of proper and effective communication and the expected adverse
- KU9.** importance and need of supporting co-workers facing problems for smooth

Generic Skills (GS)

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

- GS1.** write in at least one language, preferably in the local language of the site
- GS2.** read in one or more languages, preferably the local language of the site
- GS3.** read communication from team members regarding work completed, materials used, tools and tackles used, support required
- GS4.** speak in one or more languages, preferably in one of the local language of the site
- GS5.** listen and follow instructions / communication shared by superiors/ co-workers regarding team requirements or interfaces during work processes
- GS6.** orally communicate with co-workers regarding support required to complete the respective work
- GS7.** decide on what information is to be shared with co-workers within the team or from interfacing gang of workers
- GS8.** plan work and organize required resources in coordination with team members
- GS9.** complete all assigned task in coordination with team members
- GS10.** take initiative in resolving issues among co-workers or report the same to superiors
- GS11.** ensure best ways of coordination among team members
- GS12.** communicate with co-workers considering their educational / social background
- GS13.** evaluate the complexity of task and determine if any guidance is required from superiors



Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Interact and communicate in effective and conclusive manner</i>	14	34	-	-
PC1. pass on work related information/ requirement clearly to the team members	2	5	-	-
PC2. inform co-workers and superiors about any kind of deviations from work	2	5	-	-
PC3. address the problems effectively and report if required to immediate supervisor appropriately	3	7	-	-
PC4. receive instructions clearly from superiors and respond effectively on the same	2	5	-	-
PC5. communicate to team members/subordinates for appropriate work technique and method	3	7	-	-
PC6. seek clarification and advice as per the requirement and applicability	2	5	-	-
<i>Support co-workers to execute project requirements</i>	16	36	-	-
PC7. hand over the required material, tools tackles, equipment and work fronts timely to interfacing teams	8	18	-	-
PC8. work together with co-workers in a synchronized manner	8	18	-	-
NOS Total	30	70	-	-



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National Occupational Standards (NOS) Parameters

NOS Code	CON/N8001
NOS Name	Work effectively in a team to deliver desired results at the workplace
Sector	Construction
Sub-Sector	Generic
Occupation	Generic
NSQF Level	3
Credits	TBD
Version	1.1
Last Reviewed Date	23/05/2015
Next Review Date	31/03/2022
NSQC Clearance Date	21/07/2016



CON/N8002: Plan and organize work to meet expected outcomes

Description

This unit describes the knowledge and the skills required for an individual to plan and organize own work in order to meet expected outcome

Elements and Performance Criteria

Prioritize work activities to achieve desired results

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

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

Organize desired resources prior to commencement of work

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

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

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** importance of proper housekeeping
- KU2.** policies, procedures and work targets set by superiors
- KU3.** roles and responsibilities in executing the work for subordinates and self
- KU4.** standard practices of work to be adopted for assigned task
- KU5.** how to use available resources in a judicious and appropriate manner to minimize wastages or damage

Generic Skills (GS)

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

- GS1.** write in at least one language, preferably in the local language of the site
- GS2.** list out the assigned works and targets



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- GS3.** read in one or more language, preferably the local language at the site
- GS4.** read communication from co-workers, superiors and notices from other departments as per requirement of the level
- GS5.** speak in one or more language, preferably one of the local language at the site
- GS6.** listen and follow communication shared by co-workers regarding standard work processes, resources available, timelines, etc.
- GS7.** communicate effectively with co-workers and subordinates
- GS8.** decide on what sequence is to be adopted for execution of work
- GS9.** plan and organize the materials, tools, tackles and equipment required to execute the work
- GS10.** complete all assigned task with proper planning and organizing
- GS11.** arrange or seek help to arrange for material, tools and tackles in case of shortfall
- GS12.** analyze areas of work which could result in a delay of work, wastage of material or damage to tools and tackles
- GS13.** evaluate potential solutions to minimize avoidable delays and wastages at the construction site



Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Prioritize work activities to achieve desired results</i>	9	22	-	-
PC1. understand clearly the targets and timelines set by superiors	2	5	-	-
PC2. plan activities as per schedule and sequence	2	5	-	-
PC3. provide guidance to the subordinates to obtain desired outcome	3	7	-	-
PC4. plan housekeeping activities prior to and post completion of work	2	5	-	-
<i>Organize desired resources prior to commencement of work</i>	21	48	-	-
PC5. list and arrange required resources prior to commencement of work	3	7	-	-
PC6. select and employ correct tools, tackles and equipment for completion of desired work	3	7	-	-
PC7. complete the work with allocated resources	3	7	-	-
PC8. engage allocated manpower in an appropriate manner	3	6	-	-
PC9. use resources in an optimum manner to avoid any unnecessary wastage	3	6	-	-
PC10. employ tools, tackles and equipment with care to avoid damage to the same	2	5	-	-
PC11. organize work output, materials used, tools and tackles deployed	2	5	-	-
PC12. processes adopted to be in line with the specified standards and instructions	2	5	-	-
NOS Total	30	70	-	-



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National Occupational Standards (NOS) Parameters

NOS Code	CON/N8002
NOS Name	Plan and organize work to meet expected outcomes
Sector	Construction
Sub-Sector	Generic
Occupation	Generic
NSQF Level	3
Credits	TBD
Version	1.0
Last Reviewed Date	23/03/2015
Next Review Date	31/03/2022
NSQC Clearance Date	19/05/2015



CON/N9001: Work according to personal health, safety and environment protocol at construction site

Description

This NOS covers the skill and knowledge required for an individual to work according to personal health, safety and environmental protocol at construction site

Scope

The scope covers the following:

- Follow safety norms as defined by organization
- Adopt healthy & safe work practices
- Implement good housekeeping and environment protection process and activities

Elements and Performance Criteria

Follow safety norms as defined by organization

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

- PC1.** identify and report any hazards, risks or breaches in site safety to the appropriate authority
- PC2.** follow emergency and evacuation procedures in case of accidents, fires, natural calamities
- PC3.** follow recommended safe practices in handling construction materials, including chemical and hazardous material whenever applicable
- PC4.** participate in safety awareness programs like Tool Box Talks, safety demonstrations, mock drills, conducted at site
- PC5.** identify near miss, unsafe condition and unsafe act

Adopt healthy & safe work practices

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

- 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)
- PC7.** handle all required tools, tackles, materials & equipment safely
- PC8.** follow safe disposal of waste, harmful and hazardous materials as per EHS guidelines
- PC9.** install and apply properly all safety equipment as instructed
- PC10.** follow safety protocol and practices as laid down by site EHS department

Implement good housekeeping practices

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

- PC11.** collect and deposit construction waste into identified containers before disposal, separate containers that may be needed for disposal of toxic or hazardous wastes
- PC12.** apply ergonomic principles wherever required

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:



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- KU1.** reporting procedures in cases of breaches or hazards for site safety, accidents, and emergency situations as per guidelines
- KU2.** types of safety hazards at construction sites
- KU3.** basic ergonomic principles as per applicability
- KU4.** the procedure for responding to accidents and other emergencies at site
- KU5.** appropriate personal protective equipment to be used based on various
- KU6.** importance of handling tools, equipment and materials as per applicable
- KU7.** health and environment effect of construction materials as per
- KU8.** various environmental protection methods as per applicability
- KU9.** storage of waste including the following at appropriate location: non-combustible scrap material and debris combustible scrap material and debris general construction waste and trash (non-toxic, non-hazardous) any other hazardous wastes any other flammable wastes
- KU10.** how to use hazardous material, in a safe and appropriate manner as per
- KU11.** safety relevant to tools, tackles, & requirement as per applicability
- KU12.** housekeeping activities relevant to task

Generic Skills (GS)

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

- GS1.** write in at least one language, preferably in the local language of the site
- GS2.** fill safety formats for near miss, unsafe conditions and safety suggestions
- GS3.** read in one or more language, preferably in the local language of the site
- GS4.** read sign boards, notice boards relevant to safety
- GS5.** speak in one or more language, preferably in one of the local language of the site
- GS6.** listen instructions / communication shared by site EHS and superiors regarding site safety, and conducting tool box talk
- GS7.** communicate reporting of site conditions, hazards, accidents, etc.
- GS8.** not create unsafe conditions for others
- GS9.** keep the workplace clean and tidy
- GS10.** identify safety risks that affect the health, safety and environment for self and others working in the vicinity, tackle it if within limit or report to appropriate authority
- GS11.** assess and analyze areas which may affect health, safety and environment protocol on the site
- GS12.** ensure personal safety behavior
- GS13.** respond to emergency



Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Follow safety norms as defined by organization</i>	11	27	-	-
PC1. identify and report any hazards, risks or breaches in site safety to the appropriate authority	2	5	-	-
PC2. follow emergency and evacuation procedures in case of accidents, fires, natural calamities	2	5	-	-
PC3. follow recommended safe practices in handling construction materials, including chemical and hazardous material whenever applicable	3	7	-	-
PC4. participate in safety awareness programs like Tool Box Talks, safety demonstrations, mock drills, conducted at site	2	5	-	-
PC5. identify near miss , unsafe condition and unsafe act	2	5	-	-
<i>Adopt healthy & safe work practices</i>	15	33	-	-
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)	3	7	-	-
PC7. handle all required tools, tackles , materials & equipment safely	2	5	-	-
PC8. follow safe disposal of waste, harmful and hazardous materials as per EHS guidelines	2	5	-	-
PC9. install and apply properly all safety equipment as instructed	4	8	-	-
PC10. follow safety protocol and practices as laid down by site EHS department	4	8	-	-
<i>Implement good housekeeping practices</i>	4	10	-	-



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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC11. collect and deposit construction waste into identified containers before disposal, separate containers that may be needed for disposal of toxic or hazardous wastes	2	5	-	-
PC12. apply ergonomic principles wherever required	2	5	-	-
NOS Total	30	70	-	-



National Occupational Standards (NOS) Parameters

NOS Code	CON/N9001
NOS Name	Work according to personal health, safety and environment protocol at construction site
Sector	Construction
Sub-Sector	Generic
Occupation	Generic
NSQF Level	3
Credits	TBD
Version	1.2
Last Reviewed Date	23/05/2015
Next Review Date	31/03/2022
NSQC Clearance Date	21/07/2016

Assessment Guidelines and Assessment Weightage

Assessment Guidelines

- 1.Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC.
2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC.
3. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below).
4. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/ training center based on these criteria.
5. In case of successfully passing only certain number of NOSs, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack.
6. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack

Minimum Aggregate Passing % at QP Level : 70



Qualification Pack



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

Assessment Weightage

Compulsory NOS

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
CON/N0712.Assemble materials, equipments for bored cast in-situ concrete piling work	20	80	-	-	100	18
CON/N0713.Assist in conventional bored cast in situ concrete piling work	20	80	-	-	100	26
CON/N0714.Break RCC piles above cut-off level using pneumatic hammers	20	80	-	-	100	22
CON/N8001.Work effectively in a team to deliver desired results at the workplace	30	70	-	-	100	8
CON/N8002.Plan and organize work to meet expected outcomes	30	70	-	-	100	10
CON/N9001.Work according to personal health, safety and environment protocol at construction site	30	70	-	-	100	16
Total	150	450	-	-	600	100



Qualification Pack



Acronyms

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training



Qualification Pack



Glossary

Sector	Sector is a conglomeration of different business operations having similar business and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.
Sub-sector	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
Occupation	Occupation is a set of job roles, which perform similar/ related set of functions in an industry.
Job role	Job role defines a unique set of functions that together form a unique employment opportunity in an organisation.
Occupational Standards (OS)	OS specify the standards of performance an individual must achieve when carrying out a function in the workplace, together with the Knowledge and Understanding (KU) they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria (PC)	Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task.
National Occupational Standards (NOS)	NOS are occupational standards which apply uniquely in the Indian context.
Qualifications Pack (QP)	QP comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A QP is assigned a unique qualifications pack code.
Unit Code	Unit code is a unique identifier for an Occupational Standard, which is denoted by an 'N'
Unit Title	Unit title gives a clear overall statement about what the incumbent should be able to do.
Description	Description gives a short summary of the unit content. This would be helpful to anyone searching on a database to verify that this is the appropriate OS they are looking for.
Scope	Scope is a set of statements specifying the range of variables that an individual may have to deal with in carrying out the function which have a critical impact on quality of performance required.
Knowledge and Understanding (KU)	Knowledge and Understanding (KU) are statements which together specify the technical, generic, professional and organisational specific knowledge that an individual needs in order to perform to the required standard.



Qualification Pack



Organisational Context	Organisational context includes the way the organisation is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.
Technical Knowledge	Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Core Skills/ Generic Skills (GS)	Core skills or Generic Skills (GS) are a group of skills that are the key to learning and working in today's world. These skills are typically needed in any work environment in today's world. These skills are typically needed in any work environment. In the context of the OS, these include communication related skills that are applicable to most job roles.
Electives	Electives are NOS/set of NOS that are identified by the sector as contributive to specialization in a job role. There may be multiple electives within a QP for each specialized job role. Trainees must select at least one elective for the successful completion of a QP with Electives.
Options	Options are NOS/set of NOS that are identified by the sector as additional skills. There may be multiple options within a QP. It is not mandatory to select any of the options to complete a QP with Options.