

QUALIFICATION PACK – OCCUPATIONAL STANDARD FOR INFRASTRUCTURE EQUIPMENT INDUSTRY

What are Occupational Standards(OS)?

- OS describe what individuals need to do, know and understand in order to carry out a particular job role or function
- OS are performance standards that individuals must achieve when carrying out functions in the workplace, together with specifications of the underpinning knowledge and understanding

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Introduction

Qualification Pack - Concrete Pump Operator

SECTOR:	INFRASTRUCTURE EQUIPMENT
SUB SECTOR:	Equipment Operations
OCCUPATION:	Operator
REFERENCE ID:	IES/Q0107
ALIGNED TO:	NCO-2004/ NIL

Brief Job Description:A concrete pump operator controls, or operates power-driven, stationary, or portable pumps and manifold systems to transfer concrete or slurries to and from various vessels and pipes to the required location.

Personal Attributes:This job requires the individual to have good hand eye coordination as also comply with industry regulations. Willingness to work, strong work ethics, and courteous behaviour with co – workers are equally desirable. He should also be physically agile, strong, have good eye sight and not suffer from colour-blindness.

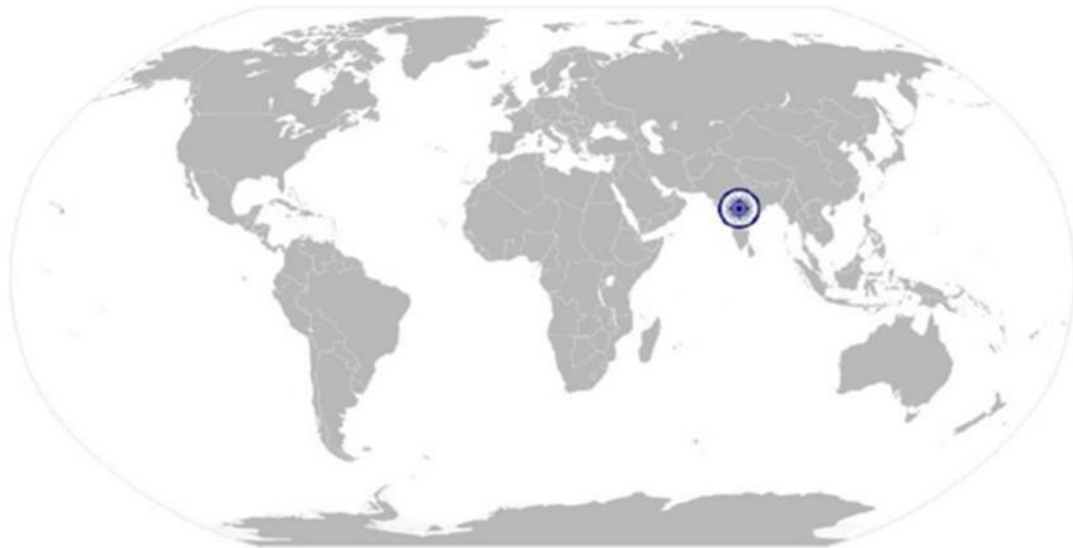
Job Details	Qualifications Pack Code	IES/Q0107		
	Job Role	Concrete Pump Operator		
	Credits(NSQF)	TBD	Version number	1.0
	Sector	Infrastructure Equipment	Drafted on	16/02/15
	Sub-sector	Equipment Operations	Last reviewed on	31/03/15
	Occupation	Operator	Next review date	31/03/17
	Job Role	Concrete Pump Operator		
Role Description	A concrete pump operator controls, or operates power-driven, stationary, or portable pumps and manifold systems to transfer concrete or slurries to and from various vessels and pipes to the required location.			
NSQF level	4			
Minimum Educational Qualifications*	Preferably Class VIII			
Maximum Educational Qualifications*	NA			
Training (Suggested but not mandatory)	Certification Training in concrete pump operations preferred			
Experience	In lieu of minimum qualification, the incumbent should have 2 years of experience in concrete pump operations			
Applicable National Occupational Standards (NOS)	<p>Compulsory</p> <ol style="list-style-type: none"> IES/N0119Carry out pre-operations checks on a concrete pump IES/N0120Operate Concrete Pump IES/N0121Perform routine maintenance and troubleshooting of a concrete pump IES/N7601Comply with worksite health and safety guidelines <p>Optional: N.A.</p>			
Performance Criteria	As described in the relevant OS units			

Definition

Keywords /Terms	Description
Sector	Sector is a conglomeration of different business operations having similar businesses 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.
Vertical	Vertical may exist within a sub-sector representing different domain areas or the client industries served by the industry.
Occupation	Occupation is a set of job roles, which perform similar/related set of functions in an industry.
Function	Function is an activity necessary for achieving the key purpose of the sector, occupation, or area of work, which can be carried out by a person or a group of persons. Functions are identified through functional analysis and form the basis of OS.
Sub-functions	Sub-functions are sub-activities essential to fulfil achieving the objectives of the function.
Job role	Job role defines a unique set of functions that together form a unique employment opportunity in an organization.
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; he/she needs to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria	Performance Criteria 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 Code	Qualifications Pack Code is a unique reference code that identifies a qualifications pack.
Qualifications Pack(QP)	Qualifications Pack comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A Qualifications Pack is assigned a unique qualification 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 find the required one.
Scope	Scope is the 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 the quality of required performance.
Knowledge and Understanding	Knowledge and Understanding are statements which together specify the technical, generic, professional and organizational specific knowledge that an individual needs in order to perform up to the required standard.

Acronyms	Keywords /Terms	Description
	OS	Occupational Standard(s)
	NOS	National Occupational Standard(s)
	QP	Qualifications Pack
	NSQF	National Skill Qualifications Framework
	ITI	Industrial Training Institute
	HCV	Heavy Commercial Vehicle
	SHE	Safety Health and Environment
	SOP	Standard Operating Procedure
	TBD	To Be Determined

National Occupational Standard



Overview

This unit provides Performance Criteria, Knowledge & Understanding and Skills & Ability for activities that need to be carried out to prepare the concrete pump for a shift.

IES/N0119

Carry out pre-operations checks on a concrete pump

Unit Code	IES/N0119
Unit Title (Task)	Carry out pre-operations checks on a concrete pump
Description	This unit provides Performance Criteria, Knowledge & Understanding and Skills & Ability for activities that need to be carried out to prepare the concrete pump for a shift.
Scope	This unit/task covers the following: <ul style="list-style-type: none"> • Pre-operation checks • Documentation and Reporting
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
Pre-Operation Checks	To be competent, the user/individual on the job must be able to: <p>PC1. Adhere to time limits given by supervisor</p> <p>PC2. Visually inspect the body and components for cracks, leakages, and ensure all switches are in neutral.</p> <p>PC3. Check that oil levels of engine, transmission, radiant coolant and brake are as per manufacturer's indicators</p> <p>PC4. Check differential and hydraulic oil levels</p> <p>PC5. Check water level and contamination in the water tank</p> <p>PC6. Conduct visual inspection to check the various controls, gauges, warning lamp, emergency button and other safety devices</p> <p>PC7. Check Transfer tube/Rock Valve/Gate Valve/S tube for wear and tear and adjust sealing gap if required</p> <p>PC8. Check delivery line for tensioners, reducers, bends, couplings, wedges/clips, leakages, and pipe support and wall thickness</p> <p>PC9. Check and set out all necessary work signs as required</p> <p>PC10. Clean air filter dust bowls and check the gasket and inner filter</p> <p>PC11. Top up coolant and oil in engine, transmission, etc. if necessary as per manufacturer's indicators</p> <p>PC12. Inspect all greasing points to ensure that all greasing pins and pivots points are well greased.</p> <p>PC13. Examine the compressor unit (if available)and all fittings</p> <p>PC14. Walk completely around the concrete pump checking that no one is under or on the machine before operating</p>
Documentation and Reporting	PC15. Maintain a checking/maintenance logbook to record all activities performed before starting the concrete pump PC16. Report defects precisely to the supervisor if beyond scope of his role
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	The user/individual on the job needs to know and understand: <p>KA1. The organization's procedures and guidelines related to Concrete pump operations</p> <p>KA2. Working of engine, transmission, hydraulic system, their use and function</p> <p>KA3. Common hazards in the work area and workplace procedures to deal with them</p> <p>KA4. Safety policy of the company</p>

National Occupational Standards

IES/N0119

Carry out pre-operations checks on a concrete pump

	<p>KA5. Procedure of filling diesel, hydraulic oil, coolant etc., in the machine</p> <p>KA6. The performance standards & procedures followed in the company</p> <p>KA7. Reporting structure in the company</p> <p>KA8. Escalation matrix for reporting unresolved problems</p> <p>KA9. Timeframe in which the complaint/problem should be resolved</p> <p>KA10. Implications of delays in process to the company</p> <p>KA11. Cost of equipment and loss for the company that result from damage of equipment and direct/ indirect cost of accidents</p> <p>KA12. Work target and review mechanism with supervisor for obtaining/ giving feedback related to performance process</p> <p>KA13. Location of tools</p> <p>KA14. Contact person in case of queries on procedure or products</p> <p>KA15. Location and process for storage and disposal of waste material disposal of waste material</p> <p>KA16. Safety Policy of the company</p>
<p>B. Technical Knowledge</p>	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. Different types of concrete pumps and their use and function</p> <p>KB2. Working of engine, transmission, their use and function</p> <p>KB3. Principles of friction</p> <p>KB4. Significance of greasing and oiling parts of a concrete pump that need routine lubrication</p> <p>KB5. Procedure of filling diesel, coolant in the machine</p> <p>KB6. Method of greasing and lubrication</p> <p>KB7. Method to identify the grade and quality of oil to be used</p> <p>KB8. Instrument panel, their location and operation</p> <p>KB9. The various types of hand signals used on the site</p> <p>KB10. Controls, levers and switches in order to operate the concrete pump properly</p> <p>KB11. Optimal working condition of concrete pump components</p> <p>KB12. Optimal engine oil pressure, radiator coolant temperature</p> <p>KB13. Visual checks to identify damage, defects, cracks or leaks beforehand</p>
<p>Skills (S)</p>	
<p>A. Core Skills / Generic Skills</p>	<p>Writing Skills</p> <p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. Record any deviations/ incidents as per prescribed norms</p> <p>Reading Skills</p> <p>The user/ individual on the job needs to know and understand how to:</p> <p>SA2. Read and comprehend basic English to read manuals of operations</p> <p>SA3. Read instructions, guidelines/procedures/rules related to the worksite and equipment operations</p> <p>Oral Communication (Listening and Speaking Skills)</p> <p>The user/ individual on the job needs to know and understand how to:</p> <p>SA4. Give clear instructions to co-workers, subordinates and other personnel</p> <p>SA5. Use correct technical terms while interacting with supervisor</p>
<p>B. Professional Skills</p>	<p>Decision Making</p> <p>The user/ individual on the job needs to know and understand how to:</p>

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Carry out pre-operations checks on a concrete pump

	SB1. Decide when to conduct maintenance checks
	Plan and Organize
	The user/ individual on the job needs to know and understand how to:
	SB2. Work with supervisors/ team mates to carry out work related tasks
	SB3. Plan work according to the required schedule and location
	SB4. Plan for cleaning and lubricating the concrete pump every day
	Customer Centricity
	The user/ individual on the job needs to know and understand how to:
	SB5. Provide service of the highest order to ensure customer satisfaction
	Problem Solving
The user/ individual on the job needs to know and understand how to:	
SB6. Identify immediate or temporary solutions to resolve mechanical issues	
SB7. Judge when to seek assistance from supervisor	
Analytical Thinking	
The user/ individual on the job needs to know and understand how to:	
SB8. Identify cause and effect relations in his area of work	
Critical Thinking	
The user/ individual on the job needs to know and understand how to:	
SB9. Analyse, evaluate and apply the information gathered from observation, experience, reasoning, or communication to act efficiently	

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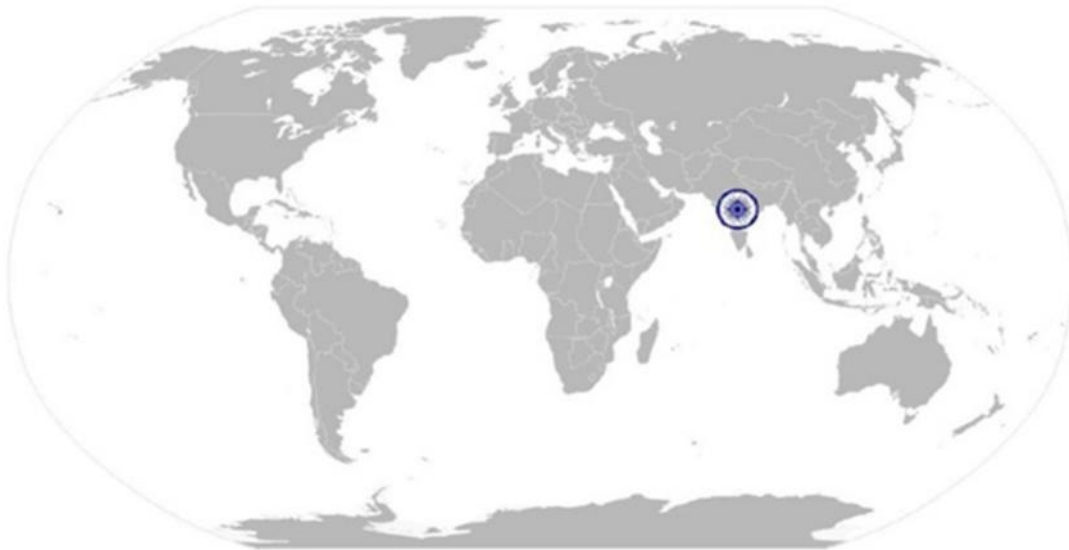
NOS Code	IES/N0119		
Credits(NSQF)	TBD	Version number	1.0
Sector	Infrastructure Equipment	Drafted on	16/02/15
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Occupation	Operator	Next review date	31/03/17

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IES/N0120

Operate Concrete Pump

National Occupational Standard



Overview

This unit provides Performance Criteria, Knowledge & Understanding and Skills & Ability for activities that are required for operating a concrete pump

IES/N0120

Operate Concrete Pump

Unit Code	IES/N0120
Unit Title (Task)	Operate Concrete Pump
Description	This unit provides Performance Criteria, Knowledge & Understanding and Skills & Ability for activities that are required for operating a concrete pump
Scope	This unit/task covers the following: <ul style="list-style-type: none"> Pumping Operation
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
Pumping Operation	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. Plan and organize the job according to given instructions</p> <p>PC2. Carry out all pre-use and running checks</p> <p>PC3. Ensure the integrity of pipelines that are connected to pumps and truck mixers prior to concrete transfer</p> <p>PC4. Receive verbal orders or over radio to determine amount of concrete to be pumped.</p> <p>PC5. Appropriately regulate the concrete flow to match the requirement of the project</p> <p>PC6. Inspect the concrete mix to ensure that the concrete is pumpable</p> <p>PC7. Communicate with other workers and supervisors using signals, radios, or telephones, to start and stop flow of concrete.</p> <p>PC8. Inspect equipment to ensure that tank levels, temperatures, chemical amounts, and pressures are at specified levels</p> <p>PC9. Report any abnormalities if necessary.</p> <p>PC10. Record operating data such as products and quantities pumped, stocks used, gauging results, and operating times.</p> <p>PC11. Clean, lubricate, and repair pumps and vessels, using hand tools and equipment as per industry standard</p> <p>PC12. Check pressure levels of concrete is as per requirement, by using calibrated pressure gauges or by reading mercury gauges and tank charts</p> <p>PC13. Check levels of concrete is as per requirement, by using calibrated rods or by reading mercury gauges and tank charts</p> <p>PC14. Check appropriate consistency of the concrete solution for smooth flow</p> <p>PC15. Check appropriate consistence of the concrete solution for smooth flow</p> <p>PC16. Carry out reverse flow incase required to clear the pump of concrete</p> <p>PC17. Use the emergency stop button to disable all power to the concrete pump in case of a crisis, as per operator manual</p>
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. Job specific documents e.g. daily maintenance checklist and importance of the same</p> <p>KA2. Common hazards in the work area and workplace procedures to deal with them</p> <p>KA3. Safety policy of the company</p> <p>KA4. Risk and impact of not following defined procedures/ work instructions</p>

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Operate Concrete Pump

	<p>KA5. The performance standards & procedures followed in the company</p> <p>KA6. Reporting structure in the company</p> <p>KA7. Escalation matrix for reporting unresolved problems</p> <p>KA8. Timeframe in which the complaint/problem should be resolved</p> <p>KA9. Implications of delays in process to the company</p> <p>KA10. Cost of equipment and loss for the company that result from damage of equipment and direct/ indirect cost of accidents</p> <p>KA11. Work target and review mechanism with supervisor for obtaining/ giving feedback related to performance process</p> <p>KA12. Location of tools</p> <p>KA13. Contact person in case of queries on procedure or products</p> <p>KA14. Location and process for storage and disposal of waste material</p>
<p>B. Technical Knowledge</p>	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. Working of engine, transmission, their use and function</p> <p>KB2. The interconnections and capacities of pipelines, valve manifolds, pumps, and tankage.</p> <p>KB3. The procedure of turning on and off the concrete pump</p> <p>KB4. The functioning of a transit mixer</p> <p>KB5. The properties of concrete</p> <p>KB6. The working of a transit mixer and a concrete pump</p> <p>KB7. The method of reversing the flow of the pump when required</p> <p>KB8. The procedure of cleaning the pump and valve</p> <p>KB9. The pressure and flow of concrete required for different heights</p> <p>KB10. Instruments panel, their significance, location and operation</p> <p>KB11. Controls, levers and switches in order to operate the concrete pump properly</p> <p>KB12. Optimal working condition of concrete pump</p> <p>KB13. Optimal engine oil pressure, radiator coolant temperature</p> <p>KB14. General safety rules for operating a concrete pump</p> <p>KB15. All safety signs and other emergency signals</p> <p>KB16. The procedure and requirement of using the emergency button</p> <p>KB17. Various methods of testing the concrete namely slump test, vebe test, compression test etc</p> <p>KB18. Basic principles of hydraulics</p> <p>KB19. The hydraulic circuit and components using hydraulic symbols</p> <p>KB20. Best practices in pipe laying</p> <p>KB21. The location and use of the emergency stop button</p>
<p>Skills (S)</p>	
<p>A. Core Skills / Generic Skills</p>	<p>Writing Skills</p> <p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. Record any deviations/ incidents as per prescribed norms</p> <p>Reading Skills</p> <p>The user/ individual on the job needs to know and understand how to:</p> <p>SA2. Read and comprehend basic English to read manuals of operations</p> <p>SA3. Interpret stakes and signage on the road and during worksite operations</p> <p>SA4. Read instructions, guidelines/procedures/rules related to the worksite</p>

IES/N0120

Operate Concrete Pump

	and equipment operations
	Oral Communication (Listening and Speaking Skills)
	The user/ individual on the job needs to know and understand how to: SA5. Give clear instructions to co-workers, subordinates and other personnel SA6. Use correct technical terms while interacting with supervisor
B. Professional Skills	Decision Making
	The user/ individual on the job needs to know and understand how to: SB1. Assess for any damage/faulty component in the concrete pump and take action accordingly SB2. Decide when to perform appropriate driving operations i.e. forward, reverse, 'U' turn, tight spot
	Plan and Organize
	The user/ individual on the job needs to know and understand how to: SB3. Work with supervisors/ team mates to carry out work related tasks SB4. Plan work according to the required schedule and location
	Customer Centricity
	The user/ individual on the job needs to know and understand how to: SB5. Provide service of the highest order to ensure customer satisfaction
	Problem Solving
	The user/ individual on the job needs to know and understand how to: SB6. Identify immediate or temporary solutions to resolve mechanical issues SB7. Judge when to seek assistance from supervisor
	Analytical Thinking
	The user/ individual on the job needs to know and understand how to: SB8. Identify possible ways to improve operational efficiency SB9. Suggest methods to avoid accidents/errors while operating machine
	Critical Thinking
	The user/ individual on the job needs to know and understand how to: SB10. Analyse, evaluate and apply the information gathered from observation, experience, reasoning, or communication to act efficiently

NOS Version Control

NOS Code	IES/N0120		
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Sector	Infrastructure Equipment	Drafted on	16/02/15
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Occupation	Operator	Next review date	31/03/17

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IES/N0121 Perform routine maintenance and troubleshooting of a concrete pump

National Occupational Standard



Overview

This unit provides Performance Criteria, Knowledge & Understanding and Skills & Ability for activities that are required for performing routine maintenance and troubleshooting on the concrete pump.

IES/N0121 Perform routine maintenance and troubleshooting of a concrete pump

National Occupational Standard

Unit Code	IES/N0121
Unit Title (Task)	Perform routine maintenance and troubleshooting of a concrete pump
Description	This unit provides Performance Criteria, Knowledge & Understanding and Skills & Ability for activities that are required for performing routine maintenance and troubleshooting on the concrete pump.
Scope	<p>This unit/task covers the following:</p> <ul style="list-style-type: none"> • Routine maintenance • Basic diagnostics and troubleshooting • Documentation and Reporting
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
Routine maintenance	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. Assess the right service schedule by tracking machine operating hours</p> <p>PC2. Clean air filter dust bowls at regular intervals</p> <p>PC3. Clean the pump and valves as per standard operating procedures</p> <p>PC4. Replenish coolants, lubricants and fluids everyday</p> <p>PC5. Grease all greasing pins and pivot points everyday</p> <p>PC6. Check battery levels and condition of the terminals and carry out minor adjustments if required</p> <p>PC7. Check and maintain the tyre rims, air pressure, wheel nuts and treads as per manufacturer's indications</p>
Basic diagnostics and troubleshooting	<p>PC8. Ensure the machine is on firm and level ground before attempting to carry out any maintenance; track machine operating hours to assess the right service schedule</p> <p>PC9. Complete timely and legibly daily/ weekly maintenance sheets as provided by the company</p> <p>PC10. Ensure that no maintenance task on any part of the equipment is performed when running or still hot</p> <p>PC11. Assess when the problem is beyond his competence and report the problem to suitably qualified and competent personnel</p> <p>PC12. Diagnose the problem</p> <p>PC13. Handle and dispose waste based on environmental guidelines at the work place</p>
Documentation and Reporting	<p>PC14. Follow reporting procedures as laid down by the employer</p> <p>PC15. Complete all documentation in the prescribed standards in a timely manner</p> <p>PC16. Report and escalate problems/ incidents as required in a timely manner</p> <p>PC17. Report defects precisely to the supervisor if beyond scope of his role</p>
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. Job specific documents e.g. daily maintenance checklist and importance of the same</p> <p>KA2. Common hazards in the work area and workplace procedures to deal with them</p> <p>KA3. Safety policy of the company</p>

IES/N0121 Perform routine maintenance and troubleshooting of a concrete pump

	<p>KA4. Risk and impact of not following defined procedures/ work instructions</p> <p>KA5. The performance standards & procedures followed in the company</p> <p>KA6. Reporting structure in the company</p> <p>KA7. Escalation matrix for reporting unresolved problems</p> <p>KA8. Timeframe in which the complaint/problem should be resolved</p> <p>KA9. Implications of delays in process to the company</p> <p>KA10. Cost of equipment and loss for the company that result from damage of equipment and direct/ indirect cost of accidents</p> <p>KA11. Work target and review mechanism with supervisor for obtaining/ giving feedback related to performance process</p> <p>KA12. Location of tools</p> <p>KA13. Contact person in case of queries on procedure or products</p> <p>KA14. Location and process for storage and disposal of waste material</p>
<p>B. Technical Knowledge</p>	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. Controls, levers and switches needed to operate the concrete pump properly</p> <p>KB2. Basic physics and mechanics involved in various functions of the concrete pump</p> <p>KB3. Common defects and general causes of breakdown</p> <p>KB4. Response to emergency situations</p> <p>KB5. The optimal levels of control indicators e.g. fuel gauge, engine oil pressure, temperature, hydraulic pressure and oil levels</p> <p>KB6. Possible sources of any unusual sound emanating from the engine</p> <p>KB7. Methods to avoid the choking in concrete pump</p> <p>KB8. Scheduled maintenance of concrete pump using maintenance charts</p> <p>KB9. Best practices in pipe cleaning methods</p>
<p>Skills (S)</p>	
<p>A. Core Skills / Generic Skills</p>	<p>Writing Skills</p> <p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. Record any deviations/ incidents as per prescribed norms</p> <p>Reading Skills</p> <p>The user/ individual on the job needs to know and understand how to:</p> <p>SA2. Read and comprehend basic English to read manuals of operations</p> <p>SA3. Read instructions, guidelines/procedures/rules related to the worksite and equipment operations</p> <p>Oral Communication (Listening and Speaking Skills)</p> <p>The user/ individual on the job needs to know and understand how to:</p> <p>SA4. Give clear instructions to co-workers, subordinates and other personnel</p> <p>SA5. Use correct technical terms while interacting with supervisor</p>
<p>B. Professional Skills</p>	<p>Decision Making</p> <p>The user/ individual on the job needs to know and understand how to:</p> <p>SB1. Decide when to conduct maintenance checks</p> <p>SB2. Evaluate the decision and conduct basic trouble shooting</p> <p>Plan and Organize</p> <p>The user/ individual on the job needs to know and understand how to:</p> <p>SB3. Work with supervisors/ team mates to carry out work related tasks</p>

IES/N0121 Perform routine maintenance and troubleshooting of a concrete pump

	SB4. Plan work according to the required schedule and location SB5. Plan for regular maintenance on a daily basis before machine operations
	Customer Centricity
	The user/ individual on the job needs to know and understand how to: SB6. Provide service of the highest order to ensure customer satisfaction
	Problem Solving
	The user/ individual on the job needs to know and understand how to: SB7. Identify immediate or temporary solutions to resolve mechanical issues SB8. Judge when to seek assistance from supervisor
	Analytical Thinking
	The user/ individual on the job needs to know and understand how to: SB9. Identify possible ways to improve operational efficiency SB10. Check for damages and diagnose common problems in the concrete pump and take relevant action
	Critical Thinking
	The user/ individual on the job needs to know and understand how to: SB11. Analyse, evaluate and apply the information gathered from observation, experience, reasoning, or communication to act efficiently

NOS Version Control

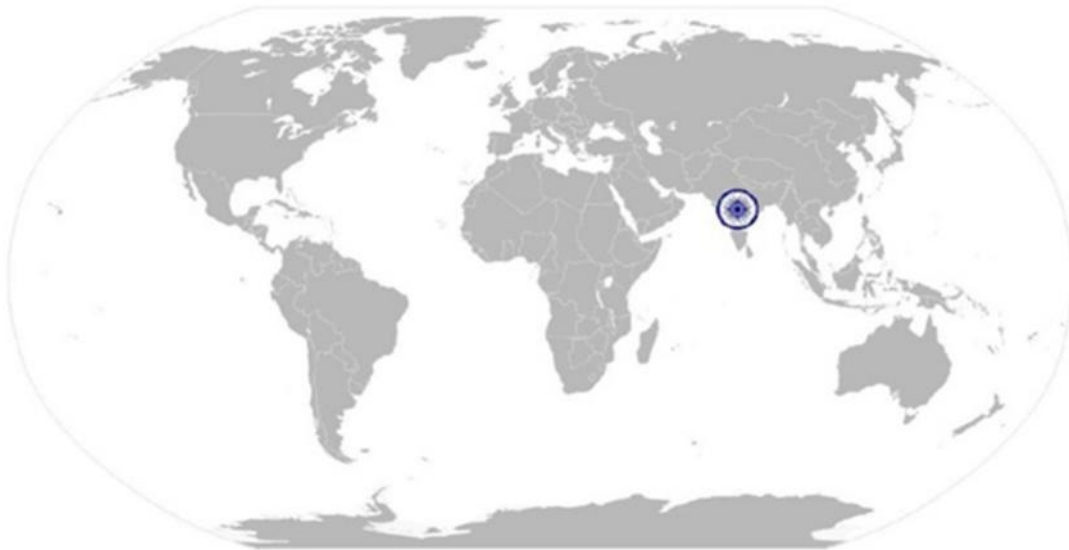
NOS Code	IES/N0121		
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Sector	Infrastructure Equipment	Drafted on	16/02/15
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IES/N7601

Comply with worksite health and safety guidelines

National Occupational Standard



Overview

This unit is about adhering to health and safety requirements at the worksite during equipment operations.

IES/N7601

Comply with worksite health and safety guidelines

Unit Code	IES/N7601
Unit Title (Task)	Comply with worksite health and safety guidelines
Description	This unit is about adhering to health and safety requirements at the worksite during equipment operations.
Scope	This unit/task covers the following: <ul style="list-style-type: none"> • Worksite health and safety
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
Worksite health and safety	To be competent, the user/individual on the job must be able to: <p>PC1. Comply with safety, health, security and environment related regulations/ guidelines at the work site</p> <p>PC2. Use Personal Protective Equipment (PPE) and other safety gear such as seat belt, body protection, respiratory protection, eye protection, ear protection and hand protection</p> <p>PC3. Follow safety measures during operations to ensure that the health and safety of self or others (including members of the public) is not at risk</p> <p>PC4. Carry out operations as per the manufacturer's and worksite related health and safety guidelines</p> <p>PC5. Handle the transport, storage and disposal of hazardous materials and waste in compliance with worksite health, safety and environmental guidelines</p> <p>PC6. Follow safety regulations and procedures with regard to worksite hazards and risks</p> <p>PC7. Operate various grades of fire extinguishers, as applicable</p> <p>PC8. Support in administering basic first aid and report to concerned team members, as required, in case of an accident</p> <p>PC9. Respond promptly and appropriately to an accident/ incident or emergency situation, within limits of your role and responsibility</p> <p>PC10. Record and report details related to operations, incidents or accidents, as applicable</p>
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	The user/individual on the job needs to know and understand: <p>KA1. Health, safety, environmental(HSE) and security related policies/ guidelines of the organization and the worksite</p> <p>KA2. The importance of complying with health, safety, environmental and security guidelines at the worksite and during operations</p> <p>KA3. Contact details of personnel responsible for Health, Safety and environment (HSE) related matters</p> <p>KA4. Location of worksite storage, SHE team and safe assembly points</p> <p>KA5. Concerned personnel to reach out in case of emergencies and accidents/ incidents</p> <p>KA6. Reporting and documentation procedures for HSE and security matters</p>
B. Technical Knowledge	The user/individual on the job needs to know and understand: <p>KB1. Manufacturer's guidelines related to health and safety requirements</p> <p>KB2. Common types of health, safety, environment and security risks related</p>

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	<p>to the worksite and operations</p> <p>KB3. Types, use and importance of Personal Protective Equipment (PPE) and other safety gear</p> <p>KB4. Safe working practices to avoid common hazards and risks</p> <p>KB5. Guidelines for transport, storage and disposal of hazardous materials and waste</p> <p>KB6. Types of common hazards and risks at the worksite including fire, electrical, gas emergencies, accidents, incidents, structure collapse, machine breakdown</p> <p>KB7. Knowledge of safe lockdown/ stop of machinery use in case of emergencies and incidents/ accidents</p> <p>KB8. Types of fire extinguishers and their use</p> <p>KB9. Common injuries and appropriate basic first aid treatment eg. electrical shock, bleeding, wounds, fractures, minor burns, eye injuries</p> <p>KB10. The importance of washing the hopper and pipeline with proper tools instead of bare hands</p> <p>KB11. The need to maintain a safe distance from any overhead electrical lines during operation</p>
Skills (S)	
A. Core Skills / Generic Skills	Writing Skills
	The user/ individual on the job needs to know and understand how to: SA1. Document and report any health and safety related incidents/ accidents
	Reading Skills
	The user/ individual on the job needs to know and understand how to: SA2. Read and comprehend basic English to read manuals of operations SA3. Read all organizational and equipment related health and safety manuals and documents SA4. Read instructions, guidelines/procedures/rules related to the worksite and equipment operations
	Oral Communication (Listening and Speaking Skills)
	The user/ individual on the job needs to know and understand how to: SA5. Give clear instructions to co-workers, subordinates and other personnel SA6. Use correct technical terms while interacting with supervisor
B. Professional Skills	Decision Making
	The user/ individual on the job needs to know and understand how to: SB1. Make an appropriate timely decision in responding to emergencies/accidents in line with organizational/ worksite guidelines SB2. Use correct PPE and other safety gear while at the worksite
	Plan and Organize
	The user/ individual on the job needs to know and understand how to: SB3. Work with supervisors/ team mates to carry out work related tasks SB4. Plan work according to the required schedule and location
	Customer Centricity
The user/ individual on the job needs to know and understand how to: SB5. Build and maintain positive and effective relationships with colleagues and customers	

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	Problem Solving
	The user/ individual on the job needs to know and understand how to: SB6. Seek appropriate assistance from other sources to resolve problems
	Analytical Thinking
	The user/ individual on the job needs to know and understand how to: SB7. Assess the intensity of the fire accident and operate fire extinguishers
	Critical Thinking
	The user/ individual on the job needs to know and understand how to: SB8. Analyse, evaluate and apply the information gathered from observation, experience, reasoning, or communication to act efficiently

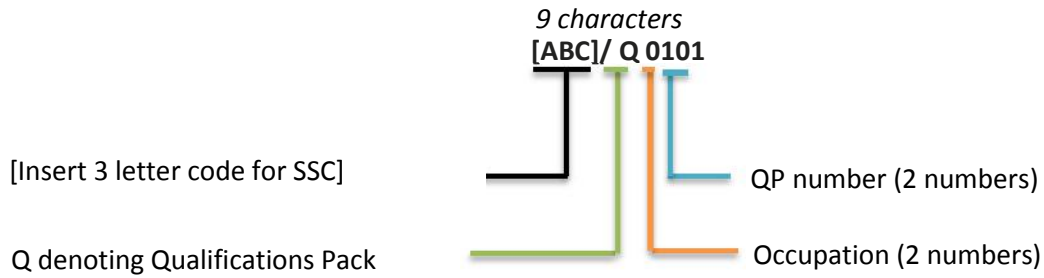
NOS Version Control

NOS Code	IES/N7601		
Credits(NSQF)	TBD	Version number	1.0
Sector	Infrastructure Equipment	Drafted on	16/02/15
Industry Sub-sector	Equipment Operations	Last reviewed on	31/03/15
Occupation	Operator	Next review date	31/03/17

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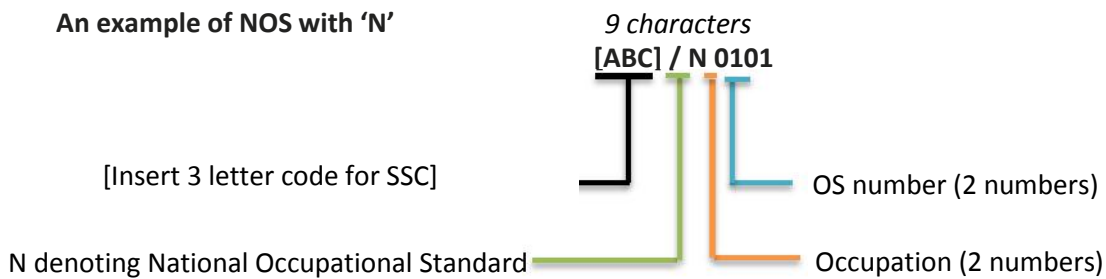
Nomenclature for QP and NOS units

Qualifications Pack



Occupational Standard

An example of NOS with 'N'



Nomenclature for QP and NOS units

The following acronyms/codes have been used in the nomenclature above:

Sub-sector	Range of Occupation numbers
Equipment Operations	1 to 10
Equipment Service and spares	11 to 20
Equipment Production	21 to 40
Equipment Sales	41 to 50
Equipment Financing	51 to 55
Core Enablers	56 to 65
Other Enablers	66 to 75
Common Occupations	76 to 85

Sequence	Description	Example
Three letters	Industry name	IES
Slash	/	/
Next letter	Whether QP or NOS	N
Next two numbers	Occupation code	01
Next two numbers	OS number	01

CRITERIA FOR ASSESSMENT OF TRAINEES

Job Role Concrete Pump Operator

Qualification Pack IES/Q0107

Sector Skill Council INFRASTRUCTURE EQUIPMENT

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 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 this criteria
5. To pass the Qualification Pack, every trainee should score a minimum of 50% aggregate
6. 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

NOS	PC	Marks Allocation			
		Total Mark	Out Of	Theory	Skills Practical
1. IES/N0119 Carry out pre-operations checks on a concrete pump	PC1. Adhere to time limits given by supervisor	45	2	0	2
	PC2. Visually inspect the body and components for cracks, leakages, and ensure all switches are in neutral.		2	0	2
	PC3. Check that oil levels of engine, transmission, radiant coolant and brake are as per manufacturer's indicators		4	1	3
	PC4. Check differential and hydraulic oil levels		3	0	3
	PC5. Check water level and contamination in the water tank		4	1	3

	PC6. Conduct visual inspection to check the various controls, gauges, warning lamp, emergency button and other safety devices		4	1	3
	PC7. Check Transfer tube/Rock Valve/Gate Valve/S tube for wear and tear and adjust sealing gap if required		3	0	3
	PC8. Check delivery line for tensioners, reducers, bends, couplings, wedges/clips, leakages, and pipe support and wall thickness		4	1	3
	PC9. Check and set out all necessary work signs as required		4	1	3
	PC10. Clean air filter dust bowls and check the gasket and inner filter		3	0	3
	PC11. Top up coolant and oil in engine, transmission, etc. if necessary as per manufacturer's indicators		2	0	2
	PC12. Inspect all greasing points to ensure that all greasing pins and pivots points are well greased.		3	1	2
	PC13. Examine the compressor unit (if available) and all fittings		2	0	2
	PC14. Walk completely around the concrete pump checking that no one is under or on the machine before operating		3	1	2

	PC15. Maintain a checking/maintenance logbook to record all activities performed before starting the concrete pump		1	0	1
	PC16. Report defects precisely to the supervisor if beyond scope of his role		1	0	1
		Total	45	7	38
2. IES/N0120 Operate a Concrete Pump	PC1. Plan and organize the job according to given instructions	55	3	0	3
	PC2. Carry out all pre-use and running checks		3	0	3
	PC3. Ensure the integrity of pipelines that are connected to pumps and truck mixers prior to concrete transfer		3	0	3
	PC4. Receive verbal orders or over radio to determine amount of concrete to be pumped.		4	1	3
	PC5. Appropriately regulate the concrete flow to match the requirement of the project		3	0	3
	PC6. Inspect the concrete mix to ensure that the concrete is pumpable		3	0	3
	PC7. Communicate with other workers and supervisors using signals, radios, or telephones, to start and stop flow of concrete.		4	1	3
	PC8. Inspect equipment to ensure that tank levels, temperatures, chemical amounts, and pressures are at specified levels		4	1	3

	PC9. Report any abnormalities if necessary.		3	0	3
	PC10. Record operating data such as products and quantities pumped, stocks used, gauging results, and operating times.		4	1	3
	PC11. Clean, lubricate, and repair pumps and vessels, using hand tools and equipment as per industry standard		3	0	3
	PC12. Check pressure levels of concrete is as per requirement, by using calibrated pressure gauges or by reading mercury gauges and tank charts		4	1	3
	PC13. Check levels of concrete is as per requirement, by using calibrated rods or by reading mercury gauges and tank charts		4	1	3
	PC14. Check appropriate consistency of the concrete solution for smooth flow		3	0	3
	PC15. Check appropriate consistence of the concrete solution for smooth flow		1	0	1
	PC16. Carry out reverse flow incase required to clear the pump of concrete		3	0	3
	PC17. Use the emergency stop button to disable all power to the concrete pump in case of a crisis, as per operator manual		3	0	3
		Total	55	6	49

3. IES/N0121 Perform routine maintenance and troubleshooting for a concrete Pump	PC1. Assess the right service schedule by tracking machine operating hours	45	4	1	3
	PC2. Clean air filter dust bowls at regular intervals		2	0	2
	PC3. Clean the pump and valves as per standard operating procedures		2	0	2
	PC4. Replenish coolants, lubricants and fluids everyday		3	1	2
	PC5. Grease all greasing pins and pivot points everyday		2	0	2
	PC6. Check battery levels and condition of the terminals and carry out minor adjustments if required		2	0	2
	PC7. Check and maintain the tyre rims, air pressure, wheel nuts and treads as per manufacturer's indications		3	0	3
	PC8. Ensure the machine is on firm and level ground before attempting to carry out any maintenance; track machine operating hours to assess the right service schedule		3	0	3
	PC9. Complete timely and legibly daily/ weekly maintenance sheets as provided by the company		3	0	3
	PC10. Ensure that no maintenance task on any part of the equipment is performed when running or still hot		3	1	2

	PC11. Assess when the problem is beyond his competence and report the problem to suitably qualified and competent personnel		3	1	2
	PC12. Diagnose the problem		1	0	1
	PC13. Handle and dispose waste based on environmental guidelines at the work place		4	1	3
	PC14. Follow reporting procedures as laid down by the employer		3	1	2
	PC15. Complete all documentation in the prescribed standards in a timely manner		3	0	3
	PC16. Report and escalate problems/ incidents as required in a timely manner		2	0	2
	PC17. Report defects precisely to the supervisor if beyond scope of his role		2	0	2
		Total	45	6	39
4. IES/N7601 Comply with worksite health and safety guidelines	PC1. Comply with safety, health, security and environment related regulations/ guidelines at the work site		2	0	2
	PC2. Use Personal Protective Equipment (PPE) and other safety gear such as seat belt, body protection, respiratory protection, eye protection, ear protection and hand protection	35	4	1	3
	PC3. Follow safety measures during operations to ensure that the health and safety of self or others (including members of		3	0	3

	the public) is not at risk				
	PC4. Carry out operations as per the manufacturer's and worksite related health and safety guidelines		4	1	3
	PC5. Handle the transport, storage and disposal of hazardous materials and waste in compliance with worksite health, safety and environmental guidelines		4	1	3
	PC6. Follow safety regulations and procedures with regard to worksite hazards and risks		3	0	3
	PC7. Operate various grades of fire extinguishers, as applicable		3	0	3
	PC8. Support in administering basic first aid and report to concerned team members, as required, in case of an accident		4	1	3
	PC9. Respond promptly and appropriately to an accident/ incident or emergency situation, within limits of your role and responsibility		4	1	3
	PC10. Record and report details related to operations, incidents or accidents, as applicable		4	1	3
		Total	35	6	29