

## Qualification Pack



# Concrete Pump Operator

QP Code: IES/Q0107

Version: 3.0

NSQF Level: 4

Infrastructure Equipment Skill Council || Jubilee Building – 2nd Floor, No.45, Museum Road  
Bengaluru - 560025

## Qualification Pack

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## Qualification Pack

### IES/Q0107: Concrete Pump Operator

#### Brief Job Description

A concrete pump operator controls, or operates powerdriven, 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.

#### Applicable National Occupational Standards (NOS)

##### Compulsory NOS:

1. [IES/N0119: Carry out pre-operations checks on a concrete pump](#)
2. [IES/N0120: Operate Concrete Pump](#)
3. [IES/N0121: Perform routine maintenance and troubleshooting of a concrete pump](#)
4. [IES/N7601: Comply with worksite health and safety](#)
5. [DGT/VSQ/N0101: Employability Skills \(30 Hours\)](#)

#### Qualification Pack (QP) Parameters

<b>Sector</b>	Infrastructure Equipment
<b>Sub-Sector</b>	Equipment Operations
<b>Occupation</b>	Operator
<b>Country</b>	India
<b>NSQF Level</b>	4
<b>Credits</b>	14
<b>Aligned to NCO/ISCO/ISIC Code</b>	NCO-2015/ 8114.0300 Concrete Pump Operator

## Qualification Pack

<b>Minimum Educational Qualification &amp; Experience</b>	8th Class (OR • 10th Class Pass + ITI (1year after Class 10th) with 1 year of relevant experience • OR • 10th Class Pass + ITI (2years after Class 10th) • OR • 10th Class Pass and pursuing continuous regular schooling • OR • 3 Year Diploma (After 10th)12th Class Pass with 6 months of relevant experience • OR • Previous relevant Qualification of NSQF Level 3 with 2 years of relevant experience) with 2 Years of experience
<b>Minimum Level of Education for Training in School</b>	
<b>Pre-Requisite License or Training</b>	Light Commercial Vehicle Driving License (LCV) is preferred
<b>Minimum Job Entry Age</b>	18 Years
<b>Last Reviewed On</b>	NA
<b>Next Review Date</b>	17/11/2025
<b>NSQC Approval Date</b>	17/11/2022
<b>Version</b>	3.0
<b>Reference code on NQR</b>	2022/IS/IESC/06810
<b>NQR Version</b>	3.0

## Qualification Pack

### IES/N0119: 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

The scope covers the following :

- Pre-operation checks
- Documentation and Reporting

#### Elements and Performance Criteria

*Pre-Operation Checks To be competent, the user/individual on the job must be able to: P*

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

- PC1.** adhere to time limits given by supervisor
- PC2.** visually inspect the body and components for cracks, leakages and ensure all switches are in neutral
- PC3.** check that the oil levels in the engine, transmission, radiant coolant and brake regions are in accordance with the manufacturer's specifications
- PC4.** check differential and hydraulic oil levels
- PC5.** check water level and contamination in the water tank
- PC6.** visually inspect the different controls, gauges, warning bulb, emergency button and other safety measures
- PC7.** examine the transfer tube/rock valve/gate valve/s tube for wear and tear and if necessary, adjust the sealing gap
- PC8.** visually inspect the body and components for cracks, leakages and ensure all switches are in neutral.
- PC9.** check and setout all necessary worksigns as required
- PC10.** clean air filter dust bowls and check the gasket of the inner filter
- PC11.** top up coolant and oil in engine, transmission and all the compartments, as per manufacturer's indicators
- PC12.** inspect all lubrication points to ensure that all lubrication pins and pivot points are properly lubricated
- PC13.** examine the compressor unit as well as any fittings
- PC14.** before running the concrete pump, go thoroughly around it to ensure that no one is beneath or on it

#### *Documentation and Reporting*

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

- PC15.** maintain inspection/maintenance logbook to record all activities performed before starting the concrete pump

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**PC16.** if the issue is outside the area of his responsibilities, notify the supervisor immediately

### Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** job-specific documentation, such as a daily maintenance checklist and the significance of the same
- KU2.** working of engine, transmission, hydraulic system, their use and function
- KU3.** common hazards in the work area and workplace procedures to deal with them
- KU4.** safety policy of the company
- KU5.** procedure of filling diesel, hydraulic oil, coolant etc., in the machine
- KU6.** the performance standards & procedures followed in the company
- KU7.** reporting structure in the company
- KU8.** escalation matrix for reporting unresolved problems
- KU9.** schedule for resolving the complaint/problem
- KU10.** the consequences of process delays for the company
- KU11.** cost of equipment and loss for the company that result from damage of equipment and direct/ indirect cost of accidents
- KU12.** work target and review mechanism with supervisor for obtaining/ giving feedback related to performance process
- KU13.** location of tools
- KU14.** contact person in case of queries on procedure or products
- KU15.** location and procedure for trash storage and disposal
- KU16.** different types of concrete pumps and their applications and functions
- KU17.** the operation of the engine and gearbox, as well as its usage and purpose
- KU18.** friction principles
- KU19.** the relevance of lubricating and oiling concrete pump components that require routine lubrication
- KU20.** process for adding fuel and coolant to the machine
- KU21.** technique of lubrication and greasing
- KU22.** technique for determining the grade and quality of the oil to be utilized
- KU23.** the instrument panel, its placement and its functionality
- KU24.** the numerous hand gestures that are utilized on the site
- KU25.** controls, levers and switches in order to effectively operate the concrete pump
- KU26.** concrete pump components should be in good operating order
- KU27.** engine oil pressure and radiator coolant temperature should be optimum
- KU28.** visual checks to identify damage, defects, cracks or leaks beforehand

### Generic Skills (GS)

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

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- GS1.** keep record of any deviations or occurrences that do not conform to the specified standards
- GS2.** read and comprehend basic english to read manuals of operations
- GS3.** read instructions, guidelines/procedures/rules related to the worksite and equipment operations
- GS4.** give clear instructions to co-workers, subordinates and other personnel
- GS5.** when talking with your supervisor, utilize the right technical words
- GS6.** decide when to conduct maintenance checks
- GS7.** work with supervisors/ team mates to carry out work related tasks
- GS8.** plan work according to the required schedule and location
- GS9.** plan for cleaning and lubricating the concrete pump every day
- GS10.** deliver first-class service to ensure client satisfaction
- GS11.** report problems that you cannot resolve to appropriate authority
- GS12.** judge when to seek assistance from supervisor
- GS13.** identify cause and effect relations in his area of work
- GS14.** examine, evaluate and apply knowledge acquired from observation, experience, logic or communication in order to act efficiently

## Qualification Pack

### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Pre-Operation Checks To be competent, the user/individual on the job must be able to: P</i>	<b>11</b>	<b>44</b>	-	-
<b>PC1.</b> adhere to time limits given by supervisor	1	3	-	-
<b>PC2.</b> visually inspect the body and components for cracks, leakages and ensure all switches are in neutral	-	4	-	-
<b>PC3.</b> check that the oil levels in the engine, transmission, radiant coolant and brake regions are in accordance with the manufacturer's specifications	1	3	-	-
<b>PC4.</b> check differential and hydraulic oil levels	-	3	-	-
<b>PC5.</b> check water level and contamination in the water tank	1	3	-	-
<b>PC6.</b> visually inspect the different controls, gauges, warning bulb, emergency button and other safety measures	1	3	-	-
<b>PC7.</b> examine the transfer tube/rock valve/gate valve/s tube for wear and tear and if necessary, adjust the sealing gap	1	3	-	-
<b>PC8.</b> visually inspect the body and components for cracks, leakages and ensure all switches are in neutral.	1	3	-	-
<b>PC9.</b> check and setout all necessary worksigns as required	1	3	-	-
<b>PC10.</b> clean air filter dust bowls and check the gasket of the inner filter	-	4	-	-
<b>PC11.</b> top up coolant and oil in engine, transmission and all the compartments, as per manufacturer's indicators	1	3	-	-
<b>PC12.</b> inspect all lubrication points to ensure that all lubrication pins and pivot points are properly lubricated	1	3	-	-



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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC13.</b> examine the compressor unit as well as any fittings	1	3	-	-
<b>PC14.</b> before running the concrete pump, go thoroughly around it to ensure that no one is beneath or on it	1	3	-	-
<i>Documentation and Reporting</i>	<b>4</b>	<b>6</b>	-	-
<b>PC15.</b> maintain inspection/maintenance logbook to record all activities performed before starting the concrete pump	2	3	-	-
<b>PC16.</b> if the issue is outside the area of his responsibilities, notify the supervisor immediately	2	3	-	-
<b>NOS Total</b>	<b>15</b>	<b>50</b>	-	-

## Qualification Pack

### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	IES/N0119
<b>NOS Name</b>	Carry out pre-operations checks on a concrete pump
<b>Sector</b>	Infrastructure Equipment
<b>Sub-Sector</b>	Equipment Operations
<b>Occupation</b>	Operator
<b>NSQF Level</b>	4
<b>Credits</b>	4
<b>Version</b>	3.0
<b>Last Reviewed Date</b>	NA
<b>Next Review Date</b>	17/11/2025
<b>NSQF Clearance Date</b>	17/11/2022

## Qualification Pack

### IES/N0120: 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

The scope covers the following :

- Pumping Operation

#### Elements and Performance Criteria

##### *Pumping Operation*

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

- PC1.** plan and arrange the work in accordance with the instructions
- PC2.** carry out all pre- use and running checks
- PC3.** prior to concrete transfer, verify the integrity of pipelines linked to pumps and truck mixers
- PC4.** accept verbal or radio commands to determine the amount of concrete to be pumped
- PC5.** effectively manage the concrete flow to meet the project's requirements
- PC6.** examine the concrete mix to confirm that it is pumpable
- PC7.** to start and halt the flow of concrete, communicate with other employees and supervisors using signals, radios or telephones
- PC8.** inspect equipment to ensure that tank levels, temperatures, chemical amounts and pressures are at specified levels
- PC9.** report any abnormalities if necessary.
- PC10.** record operating data such as products and quantities pumped, stocks used, gauging results and operating times.
- PC11.** using hand tools and industry-standard equipment, clean, lubricate and repair pumps and vessels
- PC12.** concrete pressure levels should be checked using calibrated pressure gauges or by reading mercury gauges and tank charts
- PC13.** check levels of concrete is as per requirement, by using calibrated rods or by reading mercury gauges and tank charts
- PC14.** check the concrete solution's suitable consistency for smooth flow
- PC15.** carry out reverse flow incase required to clear the chocking in pump of concrete
- PC16.** use the emergency stop button to disable all power to the concrete pump in case of a crisis, as per operator manual

#### Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

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- KU1.** job-specific documentation, such as a daily maintenance checklist and the significance of the same
- KU2.** common hazards in the work area and workplace procedures to deal with them
- KU3.** safety policy of the company
- KU4.** the dangers and consequences of failing to follow clearly specified procedures/work instructions
- KU5.** the company's performance criteria and processes
- KU6.** reporting structure in the company
- KU7.** escalation matrix for reporting unresolved problems
- KU8.** schedule for resolving the complaint/problem
- KU9.** the consequences of process delays for the firm
- KU10.** cost of equipment and loss for the company that result from damage of equipment and direct/ indirect cost of accidents
- KU11.** work target and review mechanism with supervisor for obtaining/ giving feedback related to performance process
- KU12.** location of tools
- KU13.** contact person in case of queries on procedure or products
- KU14.** location and process for storage and disposal of waste material
- KU15.** working of engine, transmission, their use and function
- KU16.** the interconnections and capacities of pipelines, valve manifolds, pumps and leakage
- KU17.** the procedure of turning on and off the concrete pump
- KU18.** the operation of a transit mixer
- KU19.** concrete's characteristics
- KU20.** how a transit mixer and a concrete pump function
- KU21.** the method of reversing the flow of the pump when required
- KU22.** the cleaning method for the pump and valve
- KU23.** the necessary concrete pressure and flow at different elevations
- KU24.** instruments panel, their significance, location and operation
- KU25.** controls, levers and switches in order to operate the concrete pump properly
- KU26.** the concrete pump is in good working order
- KU27.** engine oil pressure and radiator coolant temperature should be optimum
- KU28.** basic safety precautions while using a concrete pump
- KU29.** all safety signs and other emergency signals
- KU30.** the technique and requirements for utilising the emergency stop button
- KU31.** different ways of testing concrete, such as slump test, vebe test, compression test and so on
- KU32.** basic principles of hydraulics
- KU33.** the hydraulic circuit and components using hydraulic symbols
- KU34.** best practices in pipe laying
- KU35.** method of switching between rod side and piston side pumping

## Generic Skills (GS)

## Qualification Pack

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

- GS1.** keep record of any deviations or occurrences that do not conform to the specified standards
- GS2.** read and comprehend basic english to read manuals of operations
- GS3.** understand stakes and signs on the worksite
- GS4.** read instructions, guidelines/procedures/rules related to the worksite and equipment operations
- GS5.** give clear instructions to co-workers, subordinates and other personnel
- GS6.** when talking with your supervisor, utilize the right technical words
- GS7.** assess for any damage/faulty component in the compactor and take action accordingly
- GS8.** decide when to perform appropriate driving operations i.e. forward, reverse, 'u' turn, tight spot
- GS9.** work with supervisors/team members to complete job-related tasks
- GS10.** plan work according to the required schedule and location
- GS11.** plan for cleaning and lubricating the concrete pump every day
- GS12.** deliver first-rate service to ensure client satisfaction
- GS13.** judge when to seek assistance from supervisor
- GS14.** identify possible ways to improve operational efficiency
- GS15.** suggest ways to avoid accidents/errors when running the equipment
- GS16.** examine, evaluate and apply knowledge acquired from observation, experience, logic or communication in order to act efficiently

## Qualification Pack

### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Pumping Operation</i>	<b>15</b>	<b>50</b>	-	-
<b>PC1.</b> plan and arrange the work in accordance with the instructions	1	3	-	-
<b>PC2.</b> carry out all pre- use and running checks	1	3	-	-
<b>PC3.</b> prior to concrete transfer, verify the integrity of pipelines linked to pumps and truck mixers	1	4	-	-
<b>PC4.</b> accept verbal or radio commands to determine the amount of concrete to be pumped	1	3	-	-
<b>PC5.</b> effectively manage the concrete flow to meet the project's requirements	1	3	-	-
<b>PC6.</b> examine the concrete mix to confirm that it is pumpable	1	3	-	-
<b>PC7.</b> to start and halt the flow of concrete, communicate with other employees and supervisors using signals, radios or telephones	1	3	-	-
<b>PC8.</b> inspect equipment to ensure that tank levels, temperatures, chemical amounts and pressures are at specified levels	1	3	-	-
<b>PC9.</b> report any abnormalities if necessary.	1	3	-	-
<b>PC10.</b> record operating data such as products and quantities pumped, stocks used, gauging results and operating times.	1	3	-	-
<b>PC11.</b> using hand tools and industry-standard equipment, clean, lubricate and repair pumps and vessels	1	3	-	-
<b>PC12.</b> concrete pressure levels should be checked using calibrated pressure gauges or by reading mercury gauges and tank charts	1	3	-	-
<b>PC13.</b> check levels of concrete is as per requirement, by using calibrated rods or by reading mercury gauges and tank charts	1	3	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC14.</b> check the concrete solution's suitable consistency for smooth flow	-	4	-	-
<b>PC15.</b> carry out reverse flow incase required to clear the chocking in pump of concrete	1	3	-	-
<b>PC16.</b> use the emergency stop button to disable all power to the concrete pump in case of a crisis, as per operator manual	1	3	-	-
<b>NOS Total</b>	<b>15</b>	<b>50</b>	-	-

## Qualification Pack

### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	IES/N0120
<b>NOS Name</b>	Operate Concrete Pump
<b>Sector</b>	Infrastructure Equipment
<b>Sub-Sector</b>	Equipment Operations
<b>Occupation</b>	Operator
<b>NSQF Level</b>	4
<b>Credits</b>	4
<b>Version</b>	3.0
<b>Last Reviewed Date</b>	NA
<b>Next Review Date</b>	17/11/2025
<b>NSQC Clearance Date</b>	17/11/2022



## Qualification Pack

# IES/N0121: 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

The scope covers the following :

- Routine maintenance
- Basic diagnostics and troubleshooting
- Documentation and Reporting

## Elements and Performance Criteria

### *Routine maintenance*

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

- PC1.** monitoring machine working hours allows you to determine the best service plan
- PC2.** clean air filter dust bowls at regular intervals
- PC3.** clean the pump and valves in accordance with regular operating standards
- PC4.** replenish coolants, lubricants and fluids everyday
- PC5.** grease all greasing pins and pivot points everyday
- PC6.** check battery levels and condition of the terminals and carry out minor adjustments if required
- PC7.** check and maintain the tyre rims, air pressure, wheel nuts and treads as per manufacturers indications

### *Basic diagnostics and troubleshooting*

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

- PC8.** before attempting to carry out the task, verify that the machine is on firm and level ground
- PC9.** ensure that no maintenance task on any part of the equipment is performed when running or still hot
- PC10.** diagnose the problem
- PC11.** handle and dispose waste based on environmental guidelines at the work place

### *Documentation and Reporting*

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

- PC12.** complete all documents in accordance with the required requirements on time
- PC13.** in a timely way, report and escalate problems/incidents as needed
- PC14.** if a fault is found that is outside the scope of his duty, notify the supervisor immediately
- PC15.** adhere to employer's reporting procedures

## Qualification Pack

### Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** job specific documents e.g. daily maintenance checklist and importance of the same
- KU2.** common hazards in the work area and workplace procedures to deal with them
- KU3.** safety policy of the company
- KU4.** the dangers and consequences of failing to follow clearly specified procedures/work instructions
- KU5.** the company's performance criteria and processes
- KU6.** reporting structure in the company
- KU7.** escalation matrix for reporting unresolved problems
- KU8.** schedule for resolving the complaint/problem
- KU9.** the consequences of process delays for the firm
- KU10.** cost of equipment and loss for the company that result from damage of equipment and direct/ indirect cost of accidents
- KU11.** work target and review mechanism with supervisor for obtaining/ giving feedback related to performance process
- KU12.** location of tools
- KU13.** contact person in case of queries on procedure or products
- KU14.** location and process for storage and disposal of waste material
- KU15.** controls, levers and switches needed to operate the concrete pump properly
- KU16.** the fundamental physics and mechanics at work in the different operations of the concrete pump
- KU17.** typical defects and general reasons of failure
- KU18.** response to emergency situations
- KU19.** optimum control indicator levels, such as fuel gauge, engine oil pressure, temperature, hydraulic pressure and oil levels
- KU20.** possible sources of any unusual sound emanating from the engine
- KU21.** techniques for avoiding blockage in a concrete pump
- KU22.** concrete pump maintenance is scheduled using maintenance charts
- KU23.** best practices in pipe cleaning methods

### Generic Skills (GS)

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

- GS1.** keep record of any deviations or occurrences that do not conform to the specified standards
- GS2.** read and comprehend basic english to read manuals of operations
- GS3.** read instructions, guidelines/procedures/rules related to the worksite and equipment operations
- GS4.** give clear instructions to co-workers, subordinates and other personnel
- GS5.** when talking with your supervisor, utilize the right technical words

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- GS6.** assess for any damage/faulty component in the compactor and take action accordingly
- GS7.** evaluate the decision and conduct basic trouble shooting
- GS8.** work with supervisors/ team mates to carry out work related tasks
- GS9.** plan work according to the required schedule and location
- GS10.** plan for cleaning and lubricating the concrete pump every day
- GS11.** deliver first-class service to ensure client satisfaction
- GS12.** identify immediate or temporary solutions to resolve mechanical issues
- GS13.** judge when to seek assistance from supervisor
- GS14.** identify possible ways to improve operational efficiency
- GS15.** check for damages and diagnose common problems in the concrete pump and take relevant action
- GS16.** examine, evaluate and apply knowledge acquired from observation, experience, logic, communication in order to act efficiently

## Qualification Pack

### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Routine maintenance</i>	<b>6</b>	<b>21</b>	-	-
<b>PC1.</b> monitoring machine working hours allows you to determine the best service plan	1	3	-	-
<b>PC2.</b> clean air filter dust bowls at regular intervals	-	3	-	-
<b>PC3.</b> clean the pump and valves in accordance with regular operating standards	1	3	-	-
<b>PC4.</b> replenish coolants, lubricants and fluids everyday	1	3	-	-
<b>PC5.</b> grease all greasing pins and pivot points everyday	1	3	-	-
<b>PC6.</b> check battery levels and condition of the terminals and carry out minor adjustments if required	1	3	-	-
<b>PC7.</b> check and maintain the tyre rims, air pressure, wheel nuts and treads as per manufacturers indications	1	3	-	-
<i>Basic diagnostics and troubleshooting</i>	<b>3</b>	<b>11</b>	-	-
<b>PC8.</b> before attempting to carry out the task, verify that the machine is on firm and level ground	1	3	-	-
<b>PC9.</b> ensure that no maintenance task on any part of the equipment is performed when running or still hot	1	2	-	-
<b>PC10.</b> diagnose the problem	1	3	-	-
<b>PC11.</b> handle and dispose waste based on environmental guidelines at the work place	-	3	-	-
<i>Documentation and Reporting</i>	<b>6</b>	<b>8</b>	-	-
<b>PC12.</b> complete all documents in accordance with the required requirements on time	2	2	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC13.</b> in a timely way, report and escalate problems/incidents as needed	1	2	-	-
<b>PC14.</b> if a fault is found that is outside the scope of his duty, notify the supervisor immediately	1	2	-	-
<b>PC15.</b> adhere to employer's reporting procedures	2	2	-	-
<b>NOS Total</b>	<b>15</b>	<b>40</b>	-	-

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### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	IES/N0121
<b>NOS Name</b>	Perform routine maintenance and troubleshooting of a concrete pump
<b>Sector</b>	Infrastructure Equipment
<b>Sub-Sector</b>	Equipment Operations
<b>Occupation</b>	Operator
<b>NSQF Level</b>	4
<b>Credits</b>	4
<b>Version</b>	3.0
<b>Last Reviewed Date</b>	NA
<b>Next Review Date</b>	17/11/2025
<b>NSQF Clearance Date</b>	17/11/2022

## Qualification Pack

### IES/N7601: Comply with worksite health and safety

#### Description

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

#### Scope

The scope covers the following :

- Worksite health and safety

#### Elements and Performance Criteria

##### *Worksite health and safety*

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

- PC1.** Comply with safety, health, security and environment related regulations/guidelines at the work site
- PC2.** use personal protective equipment (ppe) and other safety gear as applicable to the equipment and the worksite
- 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
- PC4.** Carry out operations as per the manufacturer's and worksite related health and safety guidelines
- PC5.** Handle the transport, storage and disposal of hazardous materials and waste in compliance with worksite health, safety and environmental guidelines
- PC6.** operate various grades of fire extinguishers, as applicable
- PC7.** support in administering basic first aid and report to concerned team members, as required, in case of an accident
- PC8.** respond promptly and appropriately to an accident/ incident or emergency, within limits of your role and responsibility
- PC9.** record and report details related to operations, incidents or accidents, as applicable

#### Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** health, safety, environmental (HSE) and security related policies/guidelines of the organization and the worksite and its importance
- KU2.** personnel responsible for health, safety and environment (HSE) related matters and their contact details
- KU3.** location of worksite storage, she team and safe assembly points
- KU4.** reporting and documentation procedures for HSE and security matters
- KU5.** manufacturers guidelines related to health and safety requirements

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- KU6.** common types of health, safety, environment and security risks related to the worksite and operations
- KU7.** types, use and importance of personal protective equipment (PPE) and other safety gear
- KU8.** safe working practices to avoid common hazards and risks
- KU9.** guidelines for transport, storage and disposal of hazardous materials and waste
- KU10.** types of common hazards and risks at the worksite including fire, electrical, gas emergencies, accidents, incidents, structure collapse, machine breakdown
- KU11.** knowledge of safe lockdown/stop of machinery use in case of emergencies and incidents/accidents
- KU12.** types of fire extinguishers and their use
- KU13.** common injuries and appropriate basic first aid treatment e.g. electrical shock, bleeding, wounds, fractures, minor burns, eye injuries

## Generic Skills (GS)

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

- GS1.** document and report any health and safety related incidents/accidents
- GS2.** read and comprehend basic English to read manuals of operations
- GS3.** read all organizational and equipment related health and safety manuals and documents
- GS4.** read instructions, guidelines / procedures /rules related to the worksite and equipment operations
- GS5.** Give clear instructions to co-workers, subordinates and other personnel
- GS6.** Use correct technical terms while interacting with supervisor
- GS7.** Make an appropriate timely decision in responding to emergencies/accidents in line with organizational/worksite guidelines
- GS8.** Use correct PPE and other safety gear while at the worksite
- GS9.** Work with supervisors/ team mates to carry out work related tasks
- GS10.** Plan work according to the required schedule and location
- GS11.** Build and maintain positive and effective relationships with colleagues and customers
- GS12.** Seek appropriate assistance from other sources to resolve problems
- GS13.** Assess the intensity of the fire accident and operate fire extinguishers
- GS14.** Analyse, evaluate and apply the information gathered from observation, experience, reasoning, or communication to act efficiently



## Qualification Pack

### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Worksite health and safety</i>	<b>5</b>	<b>10</b>	-	-
<b>PC1.</b> Comply with safety, health, security and environment related regulations/guidelines at the work site	0.5	1	-	-
<b>PC2.</b> use personal protective equipment (ppe) and other safety gear as applicable to the equipment and the worksite	0.5	1	-	-
<b>PC3.</b> 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	0.5	1	-	-
<b>PC4.</b> Carry out operations as per the manufacturer's and worksite related health and safety guidelines	0.5	1	-	-
<b>PC5.</b> Handle the transport, storage and disposal of hazardous materials and waste in compliance with worksite health, safety and environmental guidelines	1	1	-	-
<b>PC6.</b> operate various grades of fire extinguishers, as applicable	0.5	2	-	-
<b>PC7.</b> support in administering basic first aid and report to concerned team members, as required, in case of an accident	0.5	1	-	-
<b>PC8.</b> respond promptly and appropriately to an accident/ incident or emergency, within limits of your role and responsibility	0.5	1	-	-
<b>PC9.</b> record and report details related to operations, incidents or accidents, as applicable	0.5	1	-	-
<b>NOS Total</b>	<b>5</b>	<b>10</b>	-	-

## Qualification Pack

### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	IES/N7601
<b>NOS Name</b>	Comply with worksite health and safety
<b>Sector</b>	Infrastructure Equipment
<b>Sub-Sector</b>	Equipment Operations
<b>Occupation</b>	Operator
<b>NSQF Level</b>	4
<b>Credits</b>	1
<b>Version</b>	3.0
<b>Last Reviewed Date</b>	NA
<b>Next Review Date</b>	17/11/2025
<b>NSQF Clearance Date</b>	17/11/2022

## Qualification Pack

### DGT/VSQ/N0101: Employability Skills (30 Hours)

#### Description

This unit is about employability skills, Constitutional values, becoming a professional in the 21st Century, digital, financial, and legal literacy, diversity and Inclusion, English and communication skills, customer service, entrepreneurship, and apprenticeship, getting ready for jobs and career development.

#### Scope

The scope covers the following :

- Introduction to Employability Skills
- Constitutional values - Citizenship
- Becoming a Professional in the 21st Century
- Basic English Skills
- Communication Skills
- Diversity & Inclusion
- Financial and Legal Literacy
- Essential Digital Skills
- Entrepreneurship
- Customer Service
- Getting ready for Apprenticeship & Jobs

#### Elements and Performance Criteria

##### *Introduction to Employability Skills*

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

**PC1.** understand the significance of employability skills in meeting the job requirements

##### *Constitutional values - Citizenship*

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

**PC2.** identify constitutional values, civic rights, duties, personal values and ethics and environmentally sustainable practices

##### *Becoming a Professional in the 21st Century*

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

**PC3.** explain 21st Century Skills such as Self-Awareness, Behavior Skills, Positive attitude, self-motivation, problem-solving, creative thinking, time management, social and cultural awareness, emotional awareness, continuous learning mindset etc.

##### *Basic English Skills*

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

**PC4.** speak with others using some basic English phrases or sentences

##### *Communication Skills*

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

**PC5.** follow good manners while communicating with others

**PC6.** work with others in a team

## Qualification Pack

### *Diversity & Inclusion*

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

**PC7.** communicate and behave appropriately with all genders and PwD

**PC8.** report any issues related to sexual harassment

### *Financial and Legal Literacy*

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

**PC9.** use various financial products and services safely and securely

**PC10.** calculate income, expenses, savings etc.

**PC11.** approach the concerned authorities for any exploitation as per legal rights and laws

### *Essential Digital Skills*

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

**PC12.** operate digital devices and use its features and applications securely and safely

**PC13.** use internet and social media platforms securely and safely

### *Entrepreneurship*

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

**PC14.** identify and assess opportunities for potential business

**PC15.** identify sources for arranging money and associated financial and legal challenges

### *Customer Service*

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

**PC16.** identify different types of customers

**PC17.** identify customer needs and address them appropriately

**PC18.** follow appropriate hygiene and grooming standards

### *Getting ready for apprenticeship & Jobs*

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

**PC19.** create a basic biodata

**PC20.** search for suitable jobs and apply

**PC21.** identify and register apprenticeship opportunities as per requirement

## Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

**KU1.** need for employability skills

**KU2.** various constitutional and personal values

**KU3.** different environmentally sustainable practices and their importance

**KU4.** Twenty first (21st) century skills and their importance

**KU5.** how to use basic spoken English language

**KU6.** Do and dont of effective communication

**KU7.** inclusivity and its importance

**KU8.** different types of disabilities and appropriate communication and behaviour towards PwD

**KU9.** different types of financial products and services

## Qualification Pack

- KU10.** how to compute income and expenses
- KU11.** importance of maintaining safety and security in financial transactions
- KU12.** different legal rights and laws
- KU13.** how to operate digital devices and applications safely and securely
- KU14.** ways to identify business opportunities
- KU15.** types of customers and their needs
- KU16.** how to apply for a job and prepare for an interview
- KU17.** apprenticeship scheme and the process of registering on apprenticeship portal

## Generic Skills (GS)

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

- GS1.** communicate effectively using appropriate language
- GS2.** behave politely and appropriately with all
- GS3.** perform basic calculations
- GS4.** solve problems effectively
- GS5.** be careful and attentive at work
- GS6.** use time effectively
- GS7.** maintain hygiene and sanitisation to avoid infection

## Qualification Pack

### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Introduction to Employability Skills</i>	<b>1</b>	<b>1</b>	-	-
<b>PC1.</b> understand the significance of employability skills in meeting the job requirements	-	-	-	-
<i>Constitutional values - Citizenship</i>	<b>1</b>	<b>1</b>	-	-
<b>PC2.</b> identify constitutional values, civic rights, duties, personal values and ethics and environmentally sustainable practices	-	-	-	-
<i>Becoming a Professional in the 21st Century</i>	<b>1</b>	<b>3</b>	-	-
<b>PC3.</b> explain 21st Century Skills such as Self-Awareness, Behavior Skills, Positive attitude, self-motivation, problem-solving, creative thinking, time management, social and cultural awareness, emotional awareness, continuous learning mindset etc.	-	-	-	-
<i>Basic English Skills</i>	<b>2</b>	<b>3</b>	-	-
<b>PC4.</b> speak with others using some basic English phrases or sentences	-	-	-	-
<i>Communication Skills</i>	<b>1</b>	<b>1</b>	-	-
<b>PC5.</b> follow good manners while communicating with others	-	-	-	-
<b>PC6.</b> work with others in a team	-	-	-	-
<i>Diversity &amp; Inclusion</i>	<b>1</b>	<b>1</b>	-	-
<b>PC7.</b> communicate and behave appropriately with all genders and PwD	-	-	-	-
<b>PC8.</b> report any issues related to sexual harassment	-	-	-	-
<i>Financial and Legal Literacy</i>	<b>3</b>	<b>4</b>	-	-
<b>PC9.</b> use various financial products and services safely and securely	-	-	-	-

### Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC10.</b> calculate income, expenses, savings etc.	-	-	-	-
<b>PC11.</b> approach the concerned authorities for any exploitation as per legal rights and laws	-	-	-	-
<i>Essential Digital Skills</i>	<b>4</b>	<b>6</b>	-	-
<b>PC12.</b> operate digital devices and use its features and applications securely and safely	-	-	-	-
<b>PC13.</b> use internet and social media platforms securely and safely	-	-	-	-
<i>Entrepreneurship</i>	<b>3</b>	<b>5</b>	-	-
<b>PC14.</b> identify and assess opportunities for potential business	-	-	-	-
<b>PC15.</b> identify sources for arranging money and associated financial and legal challenges	-	-	-	-
<i>Customer Service</i>	<b>2</b>	<b>2</b>	-	-
<b>PC16.</b> identify different types of customers	-	-	-	-
<b>PC17.</b> identify customer needs and address them appropriately	-	-	-	-
<b>PC18.</b> follow appropriate hygiene and grooming standards	-	-	-	-
<i>Getting ready for apprenticeship &amp; Jobs</i>	<b>1</b>	<b>3</b>	-	-
<b>PC19.</b> create a basic biodata	-	-	-	-
<b>PC20.</b> search for suitable jobs and apply	-	-	-	-
<b>PC21.</b> identify and register apprenticeship opportunities as per requirement	-	-	-	-
<b>NOS Total</b>	<b>20</b>	<b>30</b>	-	-

## Qualification Pack

### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	DGT/VSQ/N0101
<b>NOS Name</b>	Employability Skills (30 Hours)
<b>Sector</b>	Cross Sectoral
<b>Sub-Sector</b>	Professional Skills
<b>Occupation</b>	Employability
<b>NSQF Level</b>	2
<b>Credits</b>	1
<b>Version</b>	1.0
<b>Last Reviewed Date</b>	NA
<b>Next Review Date</b>	27/05/2024
<b>NSQC Clearance Date</b>	27/05/2021

## Assessment Guidelines and Assessment Weightage

### Assessment Guidelines

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Element/ 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 Element/ PC.
2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC.
3. Assessment will be conducted for all compulsory NOS, and where applicable, on the selected elective/option NOS/set of NOS.
4. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below).
5. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/ training center based on these criteria.
6. To pass the Qualification Pack assessment, every trainee should score the Recommended Pass - 70 % .
7. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack.



## Qualification Pack

### Minimum Aggregate Passing % at QP Level : 70

(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
IES/N0119.Carry out pre-operations checks on a concrete pump	15	50	-	-	65	20
IES/N0120.Operate Concrete Pump	15	50	-	-	65	30
IES/N0121.Perform routine maintenance and troubleshooting of a concrete pump	15	40	-	-	55	20
IES/N7601.Comply with worksite health and safety	5	10	-	-	15	15
DGT/VSQ/N0101.Employability Skills (30 Hours)	20	30	0	0	50	15
<b>Total</b>	<b>70</b>	<b>180</b>	<b>0</b>	<b>0</b>	<b>250</b>	<b>100</b>



## Qualification Pack

### Acronyms

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

## Qualification Pack

### Glossary

<b>Sector</b>	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.
<b>Sub-sector</b>	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
<b>Occupation</b>	Occupation is a set of job roles, which perform similar/ related set of functions in an industry.
<b>Job role</b>	Job role defines a unique set of functions that together form a unique employment opportunity in an organisation.
<b>Occupational Standards (OS)</b>	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.
<b>Performance Criteria (PC)</b>	Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task.
<b>National Occupational Standards (NOS)</b>	NOS are occupational standards which apply uniquely in the Indian context.
<b>Qualifications Pack (QP)</b>	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.
<b>Unit Code</b>	Unit code is a unique identifier for an Occupational Standard, which is denoted by an 'N'
<b>Unit Title</b>	Unit title gives a clear overall statement about what the incumbent should be able to do.
<b>Description</b>	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.
<b>Scope</b>	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.

## Qualification Pack

<b>Knowledge and Understanding (KU)</b>	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.
<b>Organisational Context</b>	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.
<b>Technical Knowledge</b>	Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
<b>Core Skills/ Generic Skills (GS)</b>	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.
<b>Electives</b>	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.
<b>Options</b>	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.