

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 - Transit Mixer Operator

SECTOR:	INFRASTRUCTURE EQUIPMENT
SUB SECTOR:	Equipment Operations
OCCUPATION:	Operator
REFERENCE ID:	IES/Q0118
ALIGNED TO:	NCO-2004/8212.30

Brief Job Description: A transit mixer operator drives and controls the mixer operations safely and as per schedule. He is responsible for loading the required quantity of aggregates, sand and cement as per mix design into the drum and discharge the concrete to the desired location at the site after mixing the batched aggregates.

Personal Attributes: The job requires the individual to be extremely careful and diligent and have high level of concentration. Hard work and strong work ethics, courteous behavior with co-workers are equally desirable. He should also be physically agile, strong, have good eye sight and not suffer from colour-blindness.

Qualifications Pack Code	IES/Q0118		
Job Role	Transit Mixer Operator		
Credits(NSQF)	TBD	Version number	1.0
Sector	Infrastructure Equipment	Drafted on	14/04/16
Sub-sector	Equipment Operations	Last reviewed on	26/04/16
Occupation	Operator	Next review date	30/04/18
NSQC Clearance on	NA		

Job Role	Transit Mixer Operator
Role Description	A transit mixer operator drives and controls the mixer operations safely and as per schedule. He is responsible for loading the required quantity of aggregates, sand and cement as per mix design into the drum and discharge the concrete to the desired location at the site after mixing the batched aggregates.
NSQF level	4
Minimum Educational Qualifications	Class VIII preferably for existing operators and Class X for fresh operators
Maximum Educational Qualifications	NA
Training (Suggested but not mandatory)	Certification Training in transit mixer operations preferably Must have valid Light Commercial Vehicle Driving License (LCV).
Minimum Job Entry Age	18 Years
Experience	Preferably 2 years of experience as junior transit mixer operator
Applicable National Occupational Standards (NOS)	Compulsory <ol style="list-style-type: none"> IES/N0152Carry out Pre-operation checks on a transit mixer IES/N0153Operate a transit mixer IES/N0154Perform routine maintenance and troubleshooting of a transit mixer IES/N7601Comply with worksite health and safety guidelines Optional: N.A.
Performance Criteria	As described in the relevant OS units

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 fulfill 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.

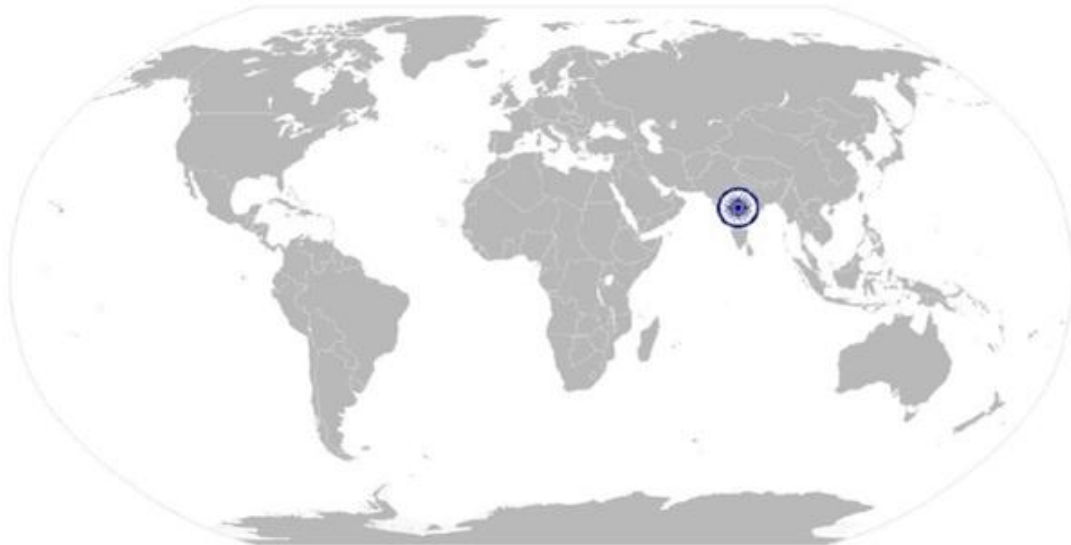
Acronyms

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

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Carry out Pre-operation checks on a transit mixer

National Occupational Standard



Overview

This unit provides Performance Criteria, Knowledge & Understanding and Skills & Ability for activities that need to be carried out to perform pre-check and prepare the transit mixer for a shift.

IES/N0152
Carry out Pre-operation checks on a transit mixer

Unit Code	IES/N0152
Unit Title (Task)	Carry out Pre-operation checks on a transit mixer
Description	This unit insight into activities that need to be carried out to perform pre-check and prepare the transit mixer for a shift
Scope	This unit/task covers the following: <ul style="list-style-type: none"> • Pre-operation checks • Reporting and documentation
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: <ul style="list-style-type: none"> PC1. Visually inspect the body components for cracks and bearing wear PC2. Check if tyre inflation pressure corresponds to that prescribed norms of the manufacturer PC3. Ensure that wheel nuts are firmly tightened as per prescribed norms of the manufacturer PC4. Check oil levels of engine transmission, radiator coolant and brake PC5. Check hydraulic oil levels as per the prescribed norms of the manufacturer PC6. Check water system for leaks and clean water pump filter per the prescribed norms of the manufacturer PC7. Drain water and sediment from the fuel tank as per operational manual PC8. Ensure that the mixer drums are clean and free from concrete PC9. Ensure not to fill the fuel tank while engine is running PC10. Check battery electrolyte level as per the prescribed norms of the manufacturer PC11. Check electronic weighing system for any malfunctioning PC12. Apply grease to all grease nipples as per the prescribed norms of the manufacturer PC13. Ensure that the area is clear of all personnel and equipment before moving the equipment PC14. Ensure driver's seat, steps and handles are always clean and free from any foreign object or grease trials, oil mud and unfastened objects in the cabin PC15. Ensure proper condition of parking brake, main horn, reverse horn and head light PC16. Check all protection and safety for appropriate position for operation
Reporting and documentation	<ul style="list-style-type: none"> PC17. Maintain a checking/maintenance logbook to record all activities performed before starting the machine PC18. Report defects precisely to the supervisor if beyond scope of the role
Knowledge and Understanding (K)	
A. Organizational Context	The user/individual on the job needs to know and understand: <ul style="list-style-type: none"> KA1. The organization's procedures and guidelines related to breakdown &

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Carry out Pre-operation checks on a transit mixer

<p>(Knowledge of the company / organization and its processes)</p>	<p>maintenance services</p> <p>KA2. The performance standards & procedures followed in the company</p> <p>KA3. Reporting structure in the company</p> <p>KA4. Timeframe in which the complaint/problem should be resolved</p> <p>KA5. Location of tools</p> <p>KA6. Contact person in case of queries on procedure or products</p> <p>KA7. Location and process for storage and disposal of waste material</p> <p>KA8. 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 mixer and their use and function</p> <p>KB2. Components of concrete mixer and its functioning-</p> <ul style="list-style-type: none"> - Mixing drum - Loading bucket - Discharge hopper - Discharge chute - Driving turret - Hydraulic pumps - Water system <p>KB3. Introduction to engine transmission, their use and function</p> <p>KB4. Basic electrical functioning and repairs</p> <p>KB5. Different types of hydraulic mechanisms</p> <p>KB6. Steering mechanisms and correct way of steering on slopes</p> <p>KB7. Significance and methods of lubricating different parts of mixer</p> <p>KB8. Procedure of filling diesel and coolant in the machine</p> <p>KB9. The various types of hand signals used on the site</p> <p>KB10. Instrument panel/cabin controls, their location and operation</p> <p>KB11. Controls, levers and switches in order to operate the mixer properly</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>KB14. Response to emergencies e.g. correct way to use fire extinguisher</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 and regional language as applicable to read manuals of operations, guidelines, etc.</p> <p>SA3. Comprehend basic sign and symbols at the worksite</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>

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Carry out Pre-operation checks on a transit mixer

B. Professional Skills	Decision Making
	The user/ individual on the job needs to know and understand how to: 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 activities 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 observations, experience, reasoning, or communication to act efficiently	

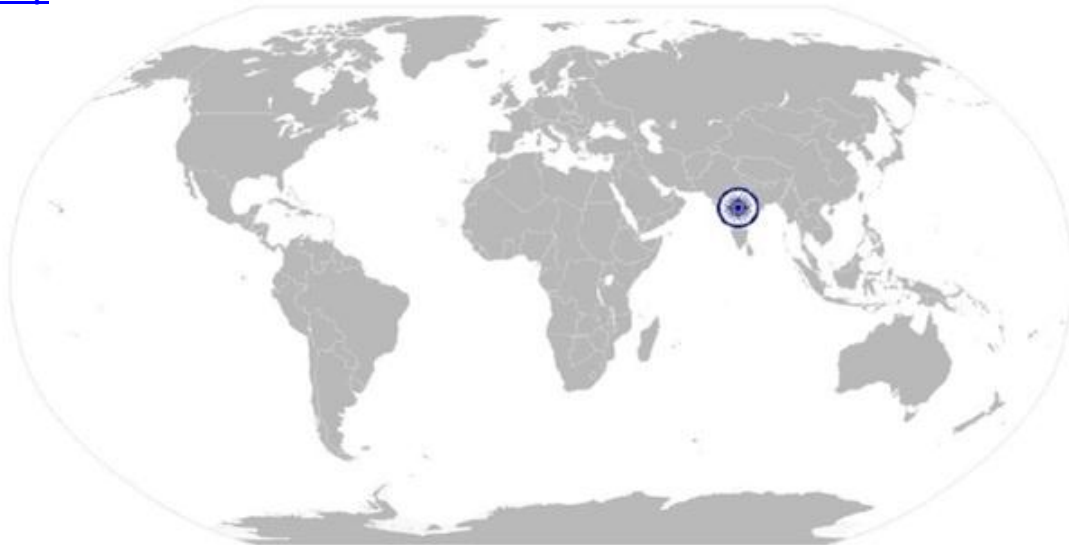
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Carry out Pre-operation checks on a transit mixer

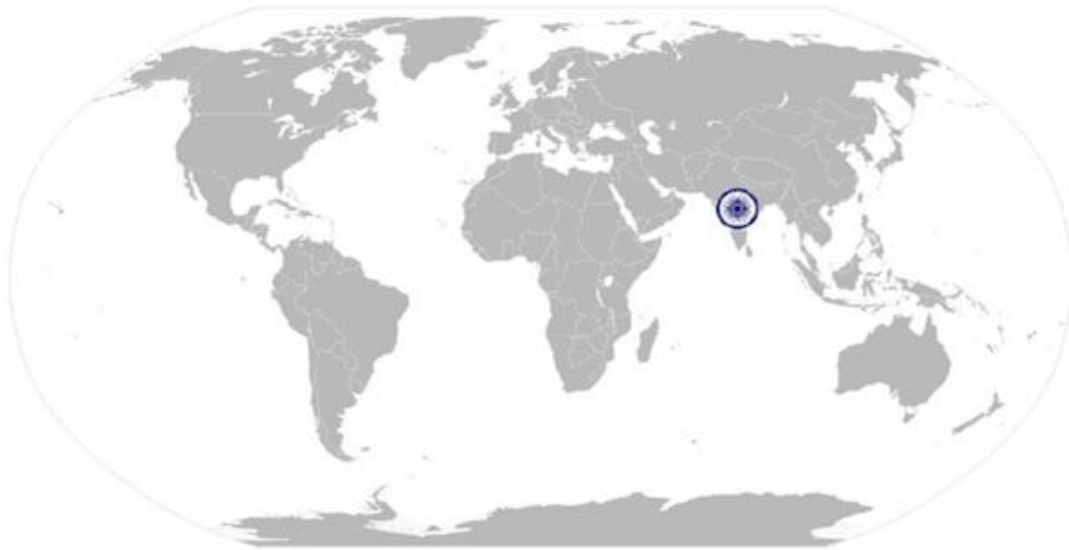
NOS Version Control

NOS Code	IES/N0152		
Credits(NSQF)	TBD	Version number	1.0
Sector	Infrastructure Equipment	Drafted on	14/04/16
Industry Sub-sector	Equipment Operations	Last reviewed on	26/04/16
Occupation	Operator	Next review date	30/04/18

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National Occupational Standard



Overview

This unit provides Performance Criteria, Knowledge & Understanding and Skills & Ability for activities that are required for operating a transit mixer.

IES/N0153
Operate a transit mixer

Unit Code	IES/N0153
Unit Title (Task)	Operate a transit mixer
Description	This unit provides insight into activities that are required for operating a transit mixer.
Scope	<p>This unit/task covers the following:</p> <ul style="list-style-type: none"> • Mixer operations • Shutdown procedures • Reporting and documentation
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
Mixer operations	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. Plan and organize the job according to instructions from the supervisor</p> <p>PC2. Inspect the worksite to identify and loose soil hidden deep trenches or marshy patches where a mixer could get stuck</p> <p>PC3. Fill water tanks ready for daily use as per organizational standards</p> <p>PC4. Carry out all peruse and running checks as per organizational standards</p> <p>PC5. Wear seat belt and adjust seat position to one's comfort</p> <p>PC6. Start the engine using the starting key</p> <p>PC7. Ensure parking brake is engaged and electric gear selector is in neutral position before starting the engine</p> <p>PC8. Select appropriate type of steering mechanism as per the situational requirements</p> <p>PC9. Load correct proportions of aggregates, cement, water and admixtures as per the production requirements</p> <p>PC10. Ensure mixer load and operating speed is within specified limits as per the manufacturer's</p> <p>PC11. Adjust the direction of drum rotation for mixing as per the requirement</p> <p>PC12. Adjust the concrete chute to the discharge position</p> <p>PC13. Discharge concrete to the desired location at the site</p> <p>PC14. Use the emergency stop button to disable all power to the transit mixer in case of a crisis as per operational manual</p>
Shut down procedures	<p>PC15. Turn off ignition after finishing operations as per the instructions given in the instructional manual</p> <p>PC16. Ensure gear is in neutral position post usage</p> <p>PC17. Ensure bucket drum and concrete-skid are cleaned as per the manufacturer's instructional manual</p> <p>PC18. Remove attachments after use</p> <p>PC19. Ensure that the machine is secured when left unattended</p>
Reporting and documentation	<p>PC20. Maintain a production logbook to record all activities performed</p> <p>PC21. Report defects precisely to the supervisor if beyond scope of the role</p>
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. The organization's procedures and guidelines related to breakdown & maintenance services</p>

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Operate a transit mixer

<p>company / organization and its processes)</p>	<p>KA2. The performance standards & procedures followed in the company KA3. Reporting structure in the company KA4. Timeframe in which the complaint/problem should be resolved KA5. Location of tools KA6. Contact person in case of queries on procedure or products KA7. Location and process for storage and disposal of waste material KA8. 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. Various type and grade of materials- cement, aggregates, sand, admixture etc. KB2. Types of lubricants KB3. Different types of concrete mixer, their use and function KB4. Machine capacities and features such as speed rate, braking, steering, stability and load KB5. Components of concrete mixer and its functioning- <ul style="list-style-type: none"> - Mixing drum - Loading bucket - Discharge hopper - Discharge chute - Driving turret - Hydraulic pumps - Water system </p> <p>KB6. Introduction to engine transmission, their use and function KB7. Basic electrical functioning and repairs KB8. Different types of hydraulic mechanisms KB9. Steering mechanisms and correct way of steering on slopes KB10. Significance and methods of lubricating different parts of mixer KB11. Procedure of filling diesel, coolant in the machine KB12. The various types of hand signals used on the site and road KB13. Instrument panel/cabin controls, their location and operation KB14. Controls, levers and switches in order to operate the mixer properly KB15. Optimal engine oil pressure, radiator coolant temperature KB16. Visual checks to identify damage, defects, cracks or leaks beforehand KB17. Correct way to use fire extinguisher</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 and regional language as applicable to read manuals of operations, guidelines, etc. SA3. Interpret stakes and signage on the road and during worksite 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>

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Operate a transit mixer

	SA4. Give clear instructions to co-workers, subordinates and other personnel SA5. 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 transit mixer 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

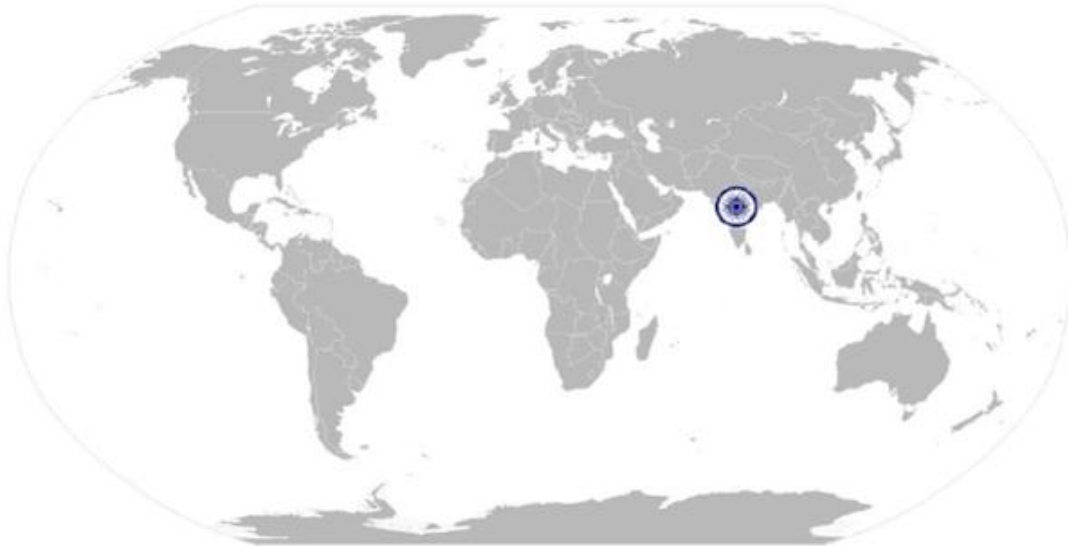
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Operate a transit mixer

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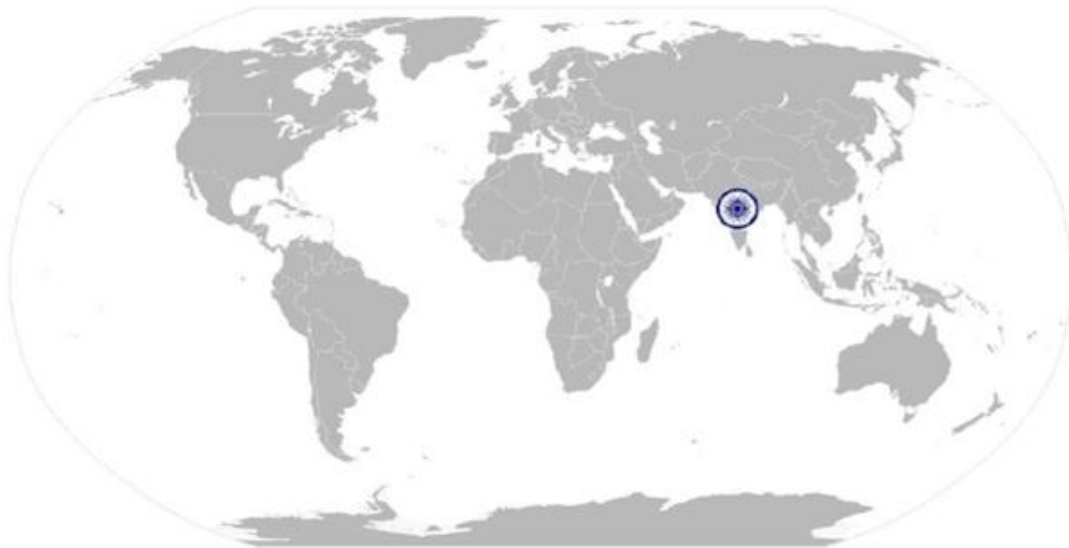
NOS Code	IES/N0153		
Credits(NSQF)	TBD	Version number	1.0
Sector	Infrastructure Equipment	Drafted on	14/04/16
Industry Sub-sector	Equipment Operations	Last reviewed on	26/04/16
Occupation	Operator	Next review date	30/04/16

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IES/N0154 Perform routine maintenance and troubleshooting of a transit mixer

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 transit mixer.

IES/N0154 Perform routine maintenance and troubleshooting of a transit mixer

Unit Code	IES/N0154
Unit Title (Task)	Perform routine maintenance and troubleshooting of a transit mixer
Description	This unit provides insight into activities that are required for performing routine maintenance and troubleshooting on the transit mixer.
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. Read and observe all plates and instructions concerning safety that are attached onto the vehicle</p> <p>PC3. Clean footplates, pedals and steps free from mud, dirt, ice and snow at regular intervals</p> <p>PC4. Check and maintain the tire rims, air pressure, wheel nuts and treads as per manufacturer's indicators</p> <p>PC5. Replenish coolants, lubricants and fluids everyday as per instructions from the manufacturer</p> <p>PC6. Grease all greasing pins and pivot points everyday as per instructions from the manufacturer</p> <p>PC7. Clean and adjust windows mirrors, lights and reflectors daily as per the requirement</p> <p>PC8. Check battery levels and condition of the terminals</p> <p>PC9. Adjust alternator belt tension and feed pump while engine is off</p> <p>PC10. Keep the tools in the appropriate place after use</p>
Basic diagnostics and troubleshooting	<p>PC11. 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>PC12. Turn off the main power from panel completely before carrying out maintenance work</p> <p>PC13. Ensure that bucket arm is lowered before any maintenance operations</p> <p>PC14. Lubricate fifth wheel and pinion with grease or equivalent lubrication using a hard bristle brush</p> <p>PC15. Complete timely and legibly daily/weekly maintenance sheets as provided by the company</p> <p>PC16. Ensure that no maintenance task on the engine is performed when running or still hot</p> <p>PC17. Use appropriate tools are used while troubleshooting</p> <p>PC18. Diagnose the problem</p> <p>PC19. Handle and dispose waste based on environmental guidelines at the work place</p>
Reporting and	PC20. Follow reporting procedures as laid down by the employer

IES/N0154 Perform routine maintenance and troubleshooting of a transit mixer

documentation	<p>PC21. Complete all documentation in the prescribed standards in a timely manner</p> <p>PC22. Report defects precisely to the supervisor if beyond scope of his role</p>
Knowledge and Understanding (K)	
<p>A. Organizational Context (Knowledge of the company / organization and its processes)</p>	<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. Emergency organization of the specific work site</p> <p>KA5. Risk and impact of not following defined procedures/work instructions</p> <p>KA6. The performance standards & procedures followed in the company</p> <p>KA7. Reporting structure in the company</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</p> <p>KA11. Location of tools</p> <p>KA12. Contact person in case of queries on procedure or products</p> <p>KA13. 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. Responsibilities of the assigned job role</p> <p>KB2. Control and switches needed to operate the transit mixer appropriately</p> <p>KB3. Basic physics and mechanics involved in various functions of the transit mixer</p> <p>KB4. Common defects and general causes of breakdown</p> <p>KB5. Response to emergency situations</p> <p>KB6. The optimal levels of control indicators e.g. fuel gauge, engine oil pressure and temperature</p> <p>KB7. Possible sources of any unusual sound emanating from the engine</p>
Skills (S)	
<p>A. Core Skills / Generic Skills</p>	Writing Skills
	<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>
	Reading Skills
	<p>The user/ individual on the job needs to know and understand how to:</p> <p>SA2. Read basic English and regional language as applicable to understand manuals of operations, guidelines, etc.</p>
Oral Communication (Listening and Speaking Skills)	
<p>The user/ individual on the job needs to know and understand how to:</p> <p>SA3. Give clear instructions to co-workers, subordinates and other personnel</p> <p>SA4. Use correct technical terms while interacting with supervisor</p>	

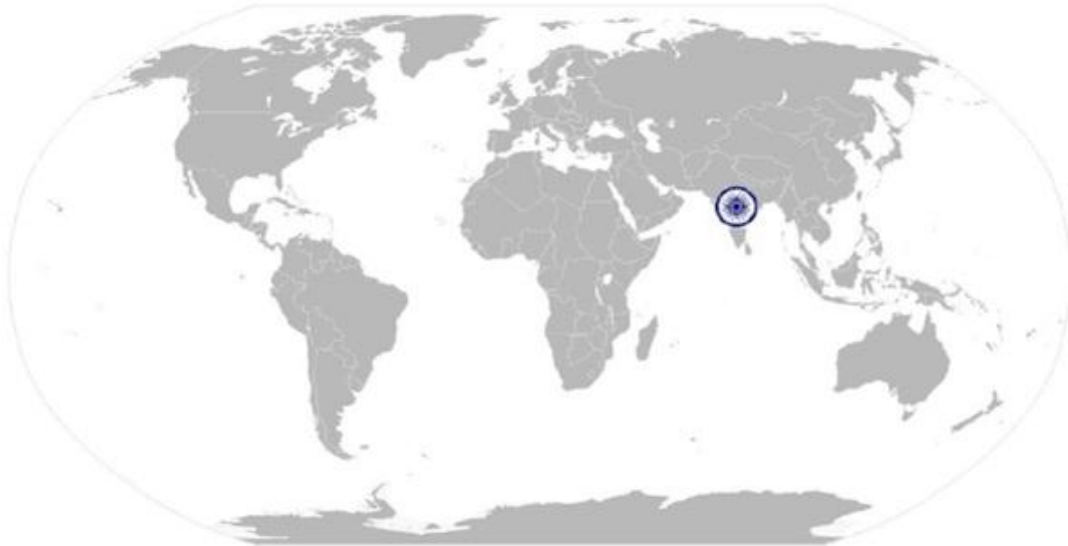
IES/N0154 Perform routine maintenance and troubleshooting of a transit mixer

B. Professional Skills	Decision Making
	The user/ individual on the job needs to know and understand how to: SB1. Decide when to conduct maintenance checks SB2. Evaluate the decide to conduct basic trouble shooting
	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 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 mixer and take relevant actions
	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	

IES/N0154 Perform routine maintenance and troubleshooting of a transit mixer NOS Version Control

NOS Code	IES/N0154		
Credits(NSQF)	TBD	Version number	1.0
Sector	Infrastructure Equipment	Drafted on	14/04/16
Industry Sub-sector	Equipment Operations	Last reviewed on	26/04/16
Occupation	Operator	Next review date	30/04/16

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National Occupational Standard

Overview

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

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 as applicable to the equipment and the worksite</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. Operate various grades of fire extinguishers, as applicable</p> <p>PC7. Support in administering basic first aid and report to concerned team members, as required, in case of an accident</p> <p>PC8. Respond promptly and appropriately to an accident/ incident or emergency situation, within limits of your role and responsibility</p> <p>PC9. 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 and its importance</p> <p>KA2. Personnel responsible for Health, Safety and environment (HSE) related matters and their contact details</p> <p>KA3. Location of worksite storage, SHE team and safe assembly points</p> <p>KA4. 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 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</p>

	<p>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>
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
	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	

	<p>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</p>
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NOS Version Control

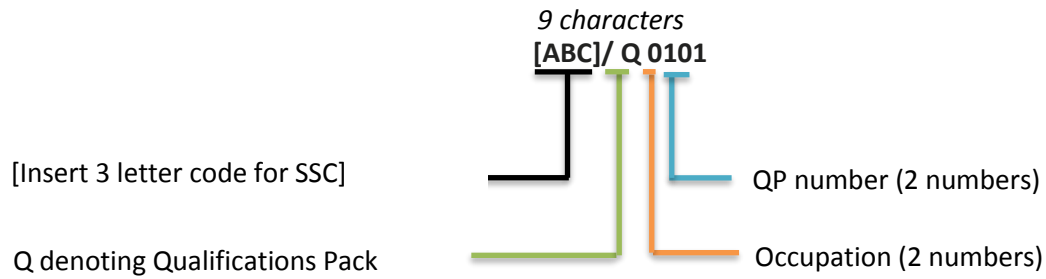
NOS Code	IES/N7601		
Credits(NSQF)	TBD	Version number	1.0
Sector	Infrastructure Equipment	Drafted on	14/04/16
Industry Sub-sector	Equipment Operations	Last reviewed on	26/04/16
Occupation	Operator	Next review date	30/04/18

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Annexure

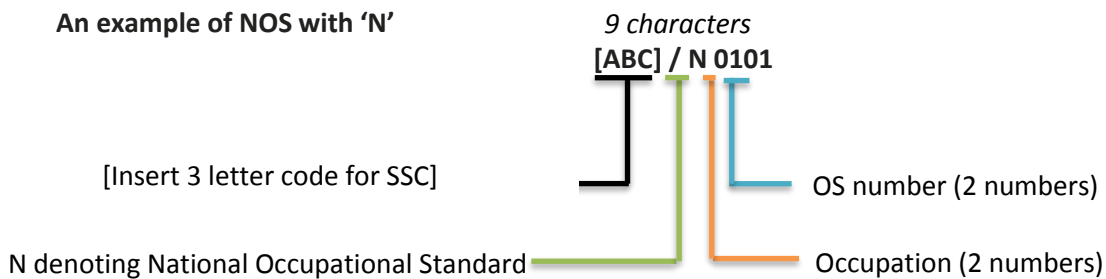
Nomenclature for QP and NOS

Qualifications Pack



Occupational Standard

An example of NOS with 'N'



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 Transit Mixer Operator

Qualification Pack IES/Q0118

Sector Skill Council IESC

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 40% in each NOS and 60% 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.

Total Marks:100				Marks Allocation	
Assessment Outcomes	Assessment Criteria for outcomes	Total Marks	Out Of	Theory	Skills Practical
1. IES/N0152 Carry out pre-operation checks on a transit mixer	PC1. Visually inspect the body components for cracks and bearing wear	30	3	1	2
	PC2. Check if tyre inflation pressure corresponds to that prescribed norms of the manufacturer		2	1	1
	PC3. Ensure that wheel nuts are firmly tightened as per prescribed norms of the manufacturer		2	1	1
	PC4. Check oil levels of engine transmission, radiator coolant and brake		2	1	1

	PC5. Check hydraulic oil levels as per the prescribed norms of the manufacturer
	PC6. Check water system for leaks and clean water pump filter per the prescribed norms of the manufacturer
	PC7. Drain water and sediment from the fuel tank as per operational manual
	PC8. Ensure that the mixer drums are clean and free from concrete
	PC9. Ensure not to fill the fuel tank while engine is running
	PC10. Check battery electrolyte level as per the prescribed norms of the manufacturer
	PC11. Check electronic weighing system for any malfunctioning
	PC12. Apply grease to all grease nipples as per the prescribed norms of the manufacturer
	PC13. Ensure that the area is clear of all personnel and equipment before moving the equipment
	PC14. Ensure driver's seat, steps and handles are always clean and free from any foreign object or grease trials, oil mud and unfastened objects in the cabin
	PC15. Ensure proper condition of parking brake, main horn, reverse horn and head light
	PC16. Check all protection and safety for appropriate position for operation
	PC17. Maintain a checking/maintenance logbook to record all activities performed before starting the machine

1.5	0.5	1
2	1	1
2.5	0.5	2
1	0.5	0.5
1	0.5	0.5
1.5	0.5	1
2	1	1
2.5	0.5	2
1.5	0.5	1
1.5	0.5	1
1	0	1
1	0	1
1	0	1

	PC18. Report defects precisely to the supervisor if beyond scope of the role		1	0	1
		Total	30	10	20
2. IES/N0153 Operate a transit mixer	PC1. Plan and organize the job according to instructions from the supervisor	35	2	1	1
	PC2. Inspect the worksite to identify and loose soil hidden deep trenches or marshy patches where a mixer could get stuck		1.5	1	0.5
	PC3. Fill water tanks ready for daily use as per organizational standards		1	0.5	0.5
	PC4. Carry out all peruse and running checks as per organizational standards		2	1	1
	PC5. Wear seat belt and adjust seat position to one's comfort		1	0.5	0.5
	PC6. Start the engine using the starting key		0.5	0	0.5
	PC7. Ensure parking brake is engaged and electric gear selector is in neutral position before starting the engine		1	0.5	0.5
	PC8. Select appropriate type of steering mechanism as per the situational requirements		1.5	0.5	1
	PC9. Load correct proportions of aggregates, cement, water and admixtures as per the production requirements		3	1	2
	PC10. Ensure mixer load and operating speed is within specified limits as per the manufacturer's		3	1	2
	PC11. Adjust the direction of drum rotation for mixing as per the requirement		2.5	0.5	2
	PC12. Adjust the concrete chute to the discharge position		2	0	2
	PC13. Discharge concrete to the desired location at the site		2	0	2

	PC14. Use the emergency stop button to disable all power to the transit mixer in case of a crisis as per operational manual		2	1	1
	PC15. Turn off ignition after finishing operations as per the instructions given in the instructional manual		1	0.5	0.5
	PC16. Ensure gear is in neutral position post usage		1	0.5	0.5
	PC17. Ensure bucket drum and concrete-skid are cleaned as per the manufacturer's instructional manual		2.5	0.5	2
	PC18. Remove attachments after use		1	0.5	0.5
	PC19. Ensure that the machine is secured when left unattended		1.5	0.5	1
	PC20. Maintain a production logbook to record all activities performed		1.5	0.5	1
	PC21. Report defects precisely to the supervisor if beyond scope of the role		1.5	0.5	1
		Total	35	12	23
3. IES/N0154 Perform routine maintenance and troubleshooting of a transit mixer	PC1. Assess the right service schedule by tracking machine operating hours	20	1	0.5	0.5
	PC2. Read and observe all plates and instructions concerning safety that are attached onto the vehicle		1	0.5	0.5
	PC3. Clean footplates, pedals and steps free from mud, dirt, ice and snow at regular intervals		0.5	0	0.5
	PC4. Check and maintain the tire rims, air pressure, wheel nuts and treads as per manufacturer's indicators		1	0.5	0.5
	PC5. Replenish coolants, lubricants and fluids everyday as per instructions from the manufacturer		1.5	0.5	1
	PC6. Grease all greasing pins and pivot points everyday as per instructions from the manufacturer		1	0.5	0.5

	PC7. Clean and adjust windows mirrors, lights and reflectors daily as per the requirement		0.5	0	0.5
	PC8. Check battery levels and condition of the terminals		1	0.5	0.5
	PC9. Adjust alternator belt tension and feed pump while engine is off		1	0	1
	PC10. Keep the tools in the appropriate place after use		1.5	0.5	1
	PC11. 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		1	0.5	0.5
	PC12. Turn off the main power from panel completely before carrying out maintenance work		1	0.5	0.5
	PC13. Ensure that bucket arm is lowered before any maintenance operations		1	0.5	0.5
	PC14. Lubricate fifth wheel and pinion with grease or equivalent lubrication using a hard bristle brush		1	0.5	0.5
	PC15. Complete timely and legibly daily/weekly maintenance sheets as provided by the company		0.5	0	0.5
	PC16. Ensure that no maintenance task on the engine is performed when running or still hot		1	0.5	0.5
	PC17. Use appropriate tools are used while troubleshooting		1	0.5	0.5
	PC18. Diagnose the problem		0.5	0	0.5
	PC19. Handle and dispose waste based on environmental guidelines at the work place		1.5	0.5	1
	PC20. Follow reporting procedures as laid down by the employer		0.5	0	0.5

	PC21. Complete all documentation in the prescribed standards in a timely manner		0.5	0	0.5
	PC22. Report defects precisely to the supervisor if beyond scope of his role		0.5	0	0.5
		Total	20	7	13
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	15	1.5	0.5	1
	PC2. Use Personal Protective Equipment (PPE) and other safety gear as applicable to the equipment and the worksite		1.5	0.5	1
	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		1.5	0.5	1
	PC4. Carry out operations as per the manufacturer's and worksite related health and safety guidelines		1.5	0.5	1
	PC5. Handle the transport, storage and disposal of hazardous materials and waste in compliance with worksite health, safety and environmental guidelines		2	1	1
	PC6. Operate various grades of fire extinguishers, as applicable		2.5	0.5	2
	PC7. Support in administering basic first aid and report to concerned team members, as required, in case of an accident		1.5	0.5	1
	PC8. Respond promptly and appropriately to an accident/ incident or emergency situation, within limits of your role and responsibility		1.5	0.5	1
	PC9. Record and report details related to operations, incidents or accidents, as applicable		1.5	0.5	1
		Total	15	5	10
Grand Total			100	34	66