

# Model Curriculum

## Transit and Self-Loading Mixer Operator

<b>SECTOR:</b>	<b>INFRASTRUCTURE EQUIPMENT</b>
<b>SUB-SECTOR:</b>	<b>EQUIPMENT OPERATIONS</b>
<b>OCCUPATION:</b>	<b>OPERATION</b>
<b>REF ID:</b>	<b>IES/Q0118, V2.0</b>
<b>LEVEL:</b>	<b>NSQF 4</b>

 <p>Skill India Skill for All</p>	 <p><b>IESC</b> Infrastructure Equipment Skill Council</p>	 <p>N·S·D·C National Skill Development Corporation Transforming the skill landscape</p>
<h1>Certificate</h1>		
<p><b>CURRICULUM COMPLIANCE TO QUALIFICATION PACK – NATIONAL OCCUPATIONAL STANDARDS</b></p>		
<p>is hereby issued by the</p>		
<p><b>INFRASTRUCTURE EQUIPMENT SKILL COUNCIL</b></p>		
<p>for the</p>		
<p><b>MODEL CURRICULUM</b></p>		
<p>Complying to National Occupational Standards of Job Role/ Qualification Pack: <u>Transit and Self-Loading Mixer Operator</u> QP No. <u>IES/Q0118 V2.0, NSQF Level4</u></p>		
Date of issuance:	March 18 <sup>th</sup> , 2019	 Authorized Signatory (Infrastructure Equipment Skill Council)
Valid up to:	March 20 <sup>th</sup> , 2022	
* Valid up to the next review date of the Qualification Pack		

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# Transit and Self-Loading Mixer Operator

## CURRICULUM / SYLLABUS

This program is aimed at training candidates for the job of a “Transit and Self-Loading Mixer Operator”, in the “Infrastructure Equipment” Sector/Industry and aims at building the following key competencies amongst the learner.

<b>Program Name</b>	<b>Transit and Self-Loading Mixer Operator</b>		
<b>Qualification Pack Name &amp; Reference ID</b>	IES/Q0118, Version No.2.0		
<b>Version No.</b>	1.0	<b>Version Update Date</b>	30 August 2019
<b>Pre-requisites to Training</b>	Certification Training in transit mixer operations preferably. <ul style="list-style-type: none"> <li>• Class-VIII</li> <li>• Must have valid Light Commercial Vehicle Driving License (LCV) in case of transit mixer operator</li> <li>• HCV driving license for Self-Loading Mixer (SLM) Operators.</li> </ul>		
	<b>After completing this programme, participants will be able to:</b> <ul style="list-style-type: none"> <li>• Evaluate safety while operating mixer and perform activities in accordance with the schedule.</li> <li>• Inspect the machine with pre-operational checks at the beginning of the shift.</li> <li>• Make use of regular maintenance checklist of a transit and self-loading mixer with the purpose to keep the units in good condition.</li> <li>• Identify fault diagnosis and perform routine maintenance.</li> <li>• Create reports by documentation in a logbook and inform the supervisor if the failure is beyond the scope of job role.</li> <li>• Prioritise worksite health and safety guidelines in accordance with health, safety, and environmental policies.</li> </ul>		

This course encompasses 4 out of 4 National Occupational Standards (NOS) of “Transit and Self-Loading Mixer Operator” Qualification Pack issued by “Infrastructure Equipment Skill Council”.

Sr. No.	Module	Key Learning Outcomes	Equipment Required
1	<p><b>Introduction</b></p> <p><b>Theory Duration</b> (hh:mm) 30:00</p> <p><b>Practical Duration</b> (hh:mm) 50:00</p> <p><b>Corresponding NOS Code</b> Bridge module</p>	<ul style="list-style-type: none"> <li>Outline the expectations and take-away at the end of this course.</li> <li>Define the role and responsibilities of the transit and self-loading mixer operator.</li> <li>Demonstrate pre-operational checks on a transit and self-loading mixer.</li> <li>Organise and operate a transit and self-loading mixer.</li> <li>Inspect transit and self-loading mixer and carry out its regular maintenance.</li> <li>Create jobs either for oneself and/or for others and obtain the ability to succeed in it.</li> </ul>	<ul style="list-style-type: none"> <li>Classroom with audio-video system</li> <li>Manufacturers’ operator and maintenance video and manuals.</li> <li>PPE: helmet, gloves, harness, earplugs, goggles, mask, etc.</li> <li>Live transit and self-loading mixer at the nearby project site for practical sessions.</li> </ul>
2	<p><b>Carry out pre-operation checks on transit and self-loading mixer.</b></p> <p><b>Theory Duration</b> (hh:mm) 08:00</p> <p><b>Practical Duration</b> (hh:mm) 20:00</p> <p><b>Corresponding NOS Code</b> IES/N0152</p>	<ul style="list-style-type: none"> <li>Inspect visually the body components for cracks, leaks and bearing wear.</li> <li>Evaluate the tyre inflation pressure and tightness of wheel nuts as per pre-defined company norms.</li> <li>Compare different types of concrete mixers, their use and function.</li> <li>Examine cleanliness of fuel tank, water pump filter and mixer drums.</li> <li>Assess electrical functioning, battery electrolyte levels and defects in the electronic weighing system.</li> <li>Explain the process of greasing prior to the machine being released for shift operation.</li> <li>Evaluate the optimal working condition of the monitoring system.</li> <li>Examine all the safety features of the transit and self-loading mixer.</li> <li>Identify preventive measures to ensure safety to surrounding and personnel in the worksite before moving the equipment to avoid an accident.</li> <li>List activities in the logbook and report the defects.</li> </ul>	<ul style="list-style-type: none"> <li>Audio-video system.</li> <li>Temperature sensor.</li> <li>Tyre pressure gauge.</li> <li>Hand wrench.</li> <li>Torque wrench.</li> <li>Battery hydrometer.</li> <li>Electronic weighing system.</li> </ul>

<p>3</p>	<p><b>Operate transit and self-loading mixer.</b></p> <p><b>Theory Duration</b> (hh:mm) 30:00</p> <p><b>Practical Duration</b> (hh:mm) 75:00</p> <p><b>Corresponding NOS Code</b> IES/N0153</p>	<ul style="list-style-type: none"> <li>• Identify the worksite inspection checklist.</li> <li>• Describe the kind of conditions at the worksite that might hamper the mixer.</li> <li>• Identify components of concrete mixer and their functions, specification and features such as speed rate, braking, steering stability, mixer load capacity, etc.</li> <li>• Define the safety measures to be taken at the worksite before starting the engine.</li> <li>• Determine the correct proportions and grade of aggregates, cement, water, etc. to be utilized.</li> <li>• Select the direction of drum rotation for mixing, adjust the concrete chute position and discharge concrete to the desired location.</li> <li>• Identify the procedure for switching ON and OFF the transit and self-loading mixer safely.</li> <li>• List all activities performed in a logbook.</li> </ul>	<ul style="list-style-type: none"> <li>• Electronic weighing system.</li> <li>• Audio-video system.</li> </ul>
<p>4</p>	<p><b>Perform routine maintenance and troubleshooting of transit and self-loading mixer.</b></p> <p><b>Theory Duration</b> (hh:mm) 14:00</p> <p><b>Practical Duration</b> (hh:mm) 35:00</p> <p><b>Corresponding NOS Code</b> IES/N0154</p>	<ul style="list-style-type: none"> <li>• Identify safety guidelines to be performed prior to any maintenance work.</li> <li>• Identify the correct service schedule by tracking machine operating hours.</li> <li>• Utilise daily/weekly maintenance checklist and carry out regular maintenance.</li> <li>• Identify the various functions and locations of special tools, equipment, accessories, etc.</li> <li>• Outline common defects and general causes of breakdown.</li> <li>• Demonstrate the steps involved in maintenance activities, basic diagnostics, and troubleshooting.</li> <li>• Determine immediate or temporary solutions to resolve mechanical issues.</li> <li>• Define possible sources of any unusual sound.</li> <li>• Inspect the machine visually.</li> <li>• Identify various lubrication and greasing points.</li> <li>• Analyse the risk and impact of not following pre-defined procedures/work instructions.</li> <li>• List all records as per given standards in a timely manner.</li> </ul>	<ul style="list-style-type: none"> <li>• Audio-video system.</li> <li>• Ratchet and socket set.</li> <li>• Screwdriver.</li> <li>• Hammer.</li> <li>• Funnel.</li> <li>• Plier and wire cutters.</li> <li>• Oil drain pan.</li> <li>• Hand wrench.</li> <li>• Torque wrench.</li> <li>• Multimeter.</li> <li>• Battery jumper.</li> <li>• Tyre pressure gauge.</li> <li>• Temperature sensor</li> </ul>

<p>5</p>	<p><b>Comply with worksite health and safety Guidelines</b></p> <p><b>Theory Duration</b> (hh:mm) 08:00</p> <p><b>Practical Duration</b> (hh:mm) 20:00</p> <p><b>Corresponding NOS Code</b> IES/N7601</p>	<ul style="list-style-type: none"> <li>• Describe the importance of safety, health, security, and environment-related regulations/guidelines.</li> <li>• Demonstrate the ways to use safety measures during operations to deduct the chances of accidents.</li> <li>• Identify methods of safe lockdown/stop machinery use in case of emergencies.</li> <li>• List common injuries that can be incurred at the workplace.</li> <li>• Demonstrate the ways of administering basic first aid.</li> <li>• List the types of common hazards and risks at the worksite and preventive measures.</li> <li>• Demonstrate the use of personal protective equipment (PPE) and other safety gear.</li> <li>• Identify grades of fire extinguishers.</li> <li>• Utilize fire extinguishers in case of emergencies.</li> <li>• Classify hazardous materials.</li> <li>• Analyse the method of transport, storage, and disposal of waste in a safe environmentally responsible manner.</li> <li>• Identify accident, incident or emergency and act promptly.</li> <li>• Recall various hand signals, safety and emergency signs for road and worksite.</li> </ul>	<ul style="list-style-type: none"> <li>• Audio-video system.</li> <li>• PPE items and safety gear.</li> <li>• Fire fighting equipment.</li> <li>• First-aid Kit.</li> </ul>
	<p><b>Total Duration</b></p> <p><b>Theory Duration</b> (hh:mm) 90:00</p> <p><b>Practical Duration</b> (hh:mm) 200:00</p>	<ul style="list-style-type: none"> <li>• Unique equipment: Temperature sensor, tyre pressure gauge, battery hydrometer, electronic weighing system, ratchet and socket set, hand wrench, torque wrench, multimeter and battery jumper.</li> <li>• Classroom aids: Whiteboard marker and participant handbook.</li> </ul>	

Grand Total Course Duration: **290 Hours, 0 Minutes.**

(This syllabus/ curriculum have been approved by [Infrastructure Equipment Skill Council](#)).

## Trainer Pre-requisites for Job role: “Transit and Self-Loading Mixer Operator” mapped to Qualification Pack: “IES/Q0118, V2.0”

Sr. No.	Area	Details
1	Description	To deliver accredited training service, mapping to the curriculum detailed above, in accordance with the Qualification Pack “ <a href="#">IES/Q 0118, Version 2.0</a> ”.
2	Personal Attributes	Aptitude for conducting training, with strong communication and interpersonal skills. Passion for training and developing others; well-organised; and a team player. Eager to learn and keep oneself updated with the latest in the mentioned field.
3	Minimum Educational Qualifications	Class 8 <sup>th</sup>
4a	Domain Certification	Certified for Job Role: “ <a href="#">Transit and Self-Loading Mixer Operator</a> ” mapped to QP: “ <a href="#">IES/Q 0118, Version 2.0</a> ”. The minimum accepted a score of 70%.
4b	Platform Certification	Recommended that the Trainer is certified for Job Role: “ <a href="#">Trainer</a> ” mapped to Qualification Pack: MEP/Q2601. The minimum accepted score for platform certification will be 80%.
5	Experience	<ul style="list-style-type: none"> <li>• Around 3 to 4 years’ site experience in transit and self-loading mixer operations.</li> <li>• At least 1 to 2 years’ experience in conducting operator and maintenance training programs.</li> </ul>

Note: For the Assessment Criteria, please refer to the QP PDF.