

Model Curriculum

Compactor Operator

Operators Course

SECTOR: **Infrastructure Equipment**
SUB-SECTOR: **Equipment Operations**

OCCUPATION: **Operator**
REFERENCE ID: **IES /Q0106 Version 1.0**
NSQF LEVEL: **4**

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Compactor Operator

CURRICULUM / SYLLABUS

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

Program Name	Compactor Operators Course		
Qualification Pack Name & Reference ID.	IES/Q 0106		
Version No.	1.0	Version Update Date	31-03-2016
Pre-requisites to Training	<ul style="list-style-type: none"> • Preferably Class VIII • Certification Training in Compactor Operations preferred • Must have valid Heavy Commercial Vehicle (HCV) Driving License • In lieu of minimum qualification, should have 2 years experience in operating compactor • <i>Technical and gallery training as per first schedule, Mining Vocational Training Rules (MVTR) 1966, if working in the mining area under DGMS</i> 		
Training Outcomes	<p>After completing this programme, participants will be able to:</p> <ul style="list-style-type: none"> • Carry out pre-operation checks for compactor operations. General introduction to compactor machine, basic working of engine, hydraulic and electrical systems, operational controls and instrument panel, preparing machine for operations • Operate a compactor. Starting of compactor, proceeding to worksite and carrying out compaction of both soil and asphalt; parking and shutting down the machine; post-operative checks • Carry out maintenance and troubleshooting of compactor. General maintenance procedures and periodic service schedule; common faults and their diagnosis; reports and documents. • Comply with worksite health and safety guidelines. Health, safety and environment policies; personal protective equipment, fire-fighting equipment, basic first aid for common injuries at work site 		

This course encompasses 4 out of 4 National Occupational Standards (NOS) of “Compactor Operator” Qualification Pack issued by “SSC: Infrastructure Equipment Skill Council”.

Sr. No.	Module	Theory Duration (hh:mm)	Practical Duration (hh:mm)	Key Learning Outcomes	Corresponding NOS Code	Equipment Required
1	Pre-operation Checks	08:00	20:00	<p>Organisational Context:</p> <ul style="list-style-type: none"> • Organisation structure, reporting and escalation line. • Performance standards and procedures in the company. • Work target and review mechanism with supervisor • Location and process for storage and disposal of waste. <p>Technical Knowledge:</p> <ul style="list-style-type: none"> • Basic working of engine and all systems; hydraulic & electrical. • Controls, levers, switches and instrument panel & fuse box • Various hand signals and safety & emergency signs at work site. • Procedure for filling and topping up of fuel, lubes & coolants. • Method of greasing and lubrication. • Optimal working condition of components and monitoring systems <p>Skills - Core & Professional</p> <ul style="list-style-type: none"> • Read & understand general instructions/ guidelines related to equipment & worksite ops. • Write and record any incidents & deviations on the prescribed formats. • Orally communicate information & 	IES/N 0116	<ul style="list-style-type: none"> • <u>Compactor Machine</u> with standard tools and equipment. • Class room with audio-video system • Manufacturers O and M video & Manual • Safety video • PPE Items • <u>Open ground</u>

				<p>instructions to co-workers in a clear and concise manner.</p> <ul style="list-style-type: none"> Plan and organise work related tasks with all concerned in most efficient and cost-effective way. <p>Performance Criteria:</p> <ul style="list-style-type: none"> Examine the machine to ensure there are no cracks and dents in the body work and weld joints. Check all fluid levels in the engine, transmission & hydraulic systems; top up where necessary Inspect air filters and gaskets; clean and empty dust bowls Drain water sediments in the fuel system Check battery electrolyte levels and terminal tightness. Check tension of fan belt and compressor belt if fitted Inspect all greasing points and pivots and ensure lubrication Check footplates and steps are free of mud and oil spills. Check and adjust seat, belt, & mirrors for operating efficiency <p>Check all controls, gauges, lights and horns are functional</p>		
2	Operate a Compactor	30:00	68:00	<p>Organisational Context</p> <ul style="list-style-type: none"> Responsibilities and time frame for assigned jobs. Emergency organisation and reporting channel work site. Equipment costs and delay implications to company. 	IES/N0117	<ul style="list-style-type: none"> <u>Compactor Machine</u> with standard tools and equipment. Class room with audio-video system

			<ul style="list-style-type: none"> • Location and process for storage and disposal of waste. • Work target and performance review mechanism with supervisor. <p>Technical Knowledge</p> <ul style="list-style-type: none"> • Besides technical knowledge related to pre-op checks should know • Different types of compactors, their usage and functions. • Principles of compaction-soil and asphalt • Critical properties of soil and asphalt • Vibration system of compactors <p>Skills - Core & Professional</p> <ul style="list-style-type: none"> • In addition to core and generic skills listed above • Interpret signage on road and at work site operations correctly. • Use correct terminology while interacting with others at site • Plan work schedule in time bound and cost-effective way. • Identify operational slow-downs and take timely remedial action. <p>Performance Criteria.</p> <ul style="list-style-type: none"> • Compactor Start - up: After carrying out all pre-checks start machine as laid down; proceed to work site • Inspect work site and plan ops; also identify problem areas. • Soil compaction: Prepare worksite and determine 	<ul style="list-style-type: none"> • Manufacturers O and M video & Operation Manual • Safety video • PPE Items • <u>Open ground</u>
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				<p>correct start point to commence compaction</p> <ul style="list-style-type: none"> • Operate the machine; in successive overlapping passes over area to be compacted; modifying techniques to suit changing work conditions. • Asphalt compaction: Prepare worksite and determine correct start point and time related to temperature of asphalt to commence compaction • Operate the machine; in successive overlapping passes over area to be compacted; modifying techniques to suit changing work conditions • Compactor Shutdown: Move and park the machine in garage; shut down as per procedure. • Inspect for damages; leaks etc and report / take appropriate action as laid down. 		
3	Carry out Maintenance and Trouble Shooting of Compactor	11:00	27:00	<p>Organisational Context:</p> <ul style="list-style-type: none"> • Organisation structure and maintenance policy. • Location of special tools and equipment/ accessories. <p>Technical Knowledge</p> <ul style="list-style-type: none"> • Maintenance and service Schedule • Common defects and general causes for breakdown. <p>Skills - Core & Professional</p> <ul style="list-style-type: none"> • In addition to core and generic skills listed above; 	IES/N 0118	<ul style="list-style-type: none"> • <u>Compactor Machine</u> with standard tools and equipment. • Class room with audio-video system • Manufacturers O and M video, Maintenance Manual & Chart • Safety video • PPE Items • <u>Lab /workshop</u>

				<ul style="list-style-type: none"> Plan maintenance & servicing keeping op needs in mind. <p>Performance Criteria</p> <ul style="list-style-type: none"> Routine Maintenance: Clean machine outside and inside Clean air filter, replenish lubes and coolants as necessary Grease all pins and pivot points daily. Check battery electrolyte levels and terminals Check tyre pressure and wheel nuts for tightness. Basic Trouble Shooting: Place machine correctly and safely using supports as necessary. Diagnose the defect/ problem and rectify; if need be seek advice from supervisor. Reporting & Documentation: Ensure documentation on prescribed formats completed in time. Report defects and problems in time and escalate as necessary 		
4	Comply with Worksite Health and Safety Guidelines	08:00	20:00	<p>Organisational Context</p> <ul style="list-style-type: none"> Health, safety, environmental (HSE) policies and guidelines of the company & their importance Contact details of personnel responsible for HSE related matters & in case of emergencies. <p>Technical Knowledge</p> <ul style="list-style-type: none"> OEMs guidelines for health, safety and security requirements. 	IES/N7601	<ul style="list-style-type: none"> <u>Compactor Machine</u> with standard tools and equipment. Class room with audio-video system. Company's ESH video. PPE Items & Safety Gear. <u>Firefighting Eqpt.</u>

			<ul style="list-style-type: none"> • Types, use and importance of Personal Protective Equipment (PPE) • Types of common hazards and risks at worksite and preventive measures. • In case of emergencies procedure to stop/ shut down machinery. • Common injuries and appropriate basic first aid treatment. • Fire-fighting equipment: Basic knowledge of handling and using them. <p>Skills - Core & Professional</p> <ul style="list-style-type: none"> • In addition to the core and generic skills listed above • Use correct PPE and other safety gear at work site. <p>Performance Criteria</p> <ul style="list-style-type: none"> • Comply with safety, health, environment and security related regulations & guidelines at work. • Correct use of Personal Protective Equipment (PPE) and other safety gear at work site. • Follow safety measures during operations to ensure health and safety of self and others, general public not at risk. • Operate fire extinguishers as applicable. • Support in administering basic first aid. • Record and report details as related to operations, incidents or accidents as applicable. 	<ul style="list-style-type: none"> • <u>First Aid Kit.</u> • <u>Open ground.</u>
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Total Duration:	<u>57:00</u>	<u>135:00</u>	Unique Equipment Required: <ul style="list-style-type: none"> • <u>Compactor Machine</u> with standard tools and equipment. • Class room with audio-video projection system • Manufacturers O and M video & Manual • Safety video • PPE Equipment: Helmet, gloves, harness, earplugs, goggles, mask • Firefighting equipment • First Aid Box and Charts • <u>Open ground</u> and Lab/workshop
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Grand Total Course Duration: **192 Hours, 0 Minutes**

*(This syllabus/ curriculum has been approved by **SSC: Infrastructure Equipment Skill Council**)*

Annexure1: Assessment Criteria

Assessment Criteria for Compactor Operator	
Job Role	Compactor Operator
Qualification Pack	IES/Q0106 Version 1.0
Sector Skill Council	Infrastructure Equipment

Sr. No.	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 centre (as per assessment criteria)
4	Individual assessment agencies will create unique evaluation for skill practical for every student at each examination/training centre based on this criteria
5	To pass the Qualification Pack, every trainee should score a minimum of 50% aggregate
6	In case of successfully passing only certain number of NOS's, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack

NOS	Performance Criteria	Total Marks	Out of	Marks Allocation	
				Theory	Skills Practical
1. IES/N0116 Carry out pre-operation checks on a compactor	PC1. Adhere to time limits given by supervisor	50	2	0	2
	PC2. Ensure visual inspections are carried out on the body components for cracks		3	0	3
	PC3. Check the oil levels of engine, transmission, radiant coolant and brake to ensure that they are as per manufacturer's indicators		4	1	3
	PC4. Check differential and hydraulic oil levels		3	0	3
	PC5. Conduct checks to ensure proper condition of parking brake, main horn, reverse horn and head light		3	0	3

	PC6. Check fan belt tension, electrolyte level and terminal tightness		3	0	3
	PC7. Get visual inspection conducted to check the various controls, gauges, warning lamp and other safety devices		4	1	3
	PC8. Check and adjust driving position, rear and side mirrors, seat belts and set them as per comfort level		4	1	3
	PC9. Clean air filter dust bowls and check the gasket and inner filter		3	0	3
	PC10. Inspect the greasing points to ensure that all greasing pins and pivots points are well greased.		4	1	3
	PC11. Examine the compressor unit and all fittings and air lines		3	0	3
	PC12. Keep footplates and steps clean and free from mud, dirt and oil		3	0	3
	PC13. Walk completely around the compactor checking that no one is under or on the machine before operating		3	1	2
	PC14. Check that all the manufacturers safety and maintenance and operation decals are available on the machine		2	0	2
	PC15. Maintain a checking/maintenance logbook to record all activities performed before starting the compactor		3	1	2
	PC16. Report defects precisely to the supervisor if beyond scope of his role		3	1	2
		Total	50	7	43
2. IES/N0117 Operate a Compactor	PC1. Plan and organize the job according to given instructions	50	2	0	2

	PC2. Inspect the worksite to identify and loose soil, hidden deep trenches or marshy patches where a compactor could get stuck		4	1	3
	PC3. Carry out all pre-use and running checks		2	0	2
	PC4. Ensure gear is on neutral position		2	0	2
	PC5. Wear seatbelt and adjust seat position		2	0	2
	PC6. Start the engine using the pushbutton switch and key switch		3	0	3
	PC7. Use the priming pump and pre-heater to start the engine in cold weather conditions		3	1	2
	PC8. Operate tandem compactor in successive overlapping passes over surfaces to be compacted		3	0	3
	PC9. Determine the temperature of the asphalt at which compaction is optimum		4	1	3
	PC10. Ensure compaction of hot mix asphalt is appropriate and as per organization standards		2	0	2
	PC11. Ensure appropriate compaction and smoothness of subgrade and asphalt		3	0	3
	PC12. Determine the direction and speed of machine to ensure they are as per the compressibility of material under changing temperatures,		4	1	3
	PC13. Ensure that no ridges are formed due to excessive pressure		3	1	2
	PC14. Turn off ignition after finishing operations		3	0	3
	PC15. Check the gear position to ensure that the gear is in neutral position post usage		3	0	3

	PC16. Idle the equipment for a few minutes post the usage		3	1	2
	PC17. Ensure that the machine is shut down and secured when left unattended		2	0	2
	PC18. Use the emergency stop button to disable all power to the compactor in case of a crisis, as per operator manual		2	0	2
		Total	50	6	44
3. IES/N0118 Perform routine maintenance and troubleshooting for a compactor	PC1. Assess the right service schedule by tracking machine operating hours	50	3	0	3
	PC2. Clean air filter dust bowls at regular intervals		3	0	3
	PC3. Clean footplates, pedals and steps free from mud, dirt, ice and snow at regular intervals		3	0	3
	PC4. Replenish coolants, lubricants and fluids everyday		4	1	3
	PC5. Grease all greasing pins and pivot points everyday		4	1	3
	PC6. Check battery levels and condition of the terminals and carry out minor adjustments if required		3	0	3
	PC7. Check and maintain the tyre rims, air pressure, wheel nits and treads as per manufacturer's indicators		4	1	3
	PC8. Ensure the machine is on firm and level ground before attempting to carry out any maintenance; track machine operating hours to assess the right service schedule		4	1	3

	PC9. Complete timely and legibly daily/ weekly maintenance sheets as provided by the company		3	0	3
	PC10. Ensure that no maintenance task on the engine is performed when running or still hot		2	0	2
	PC11. Assess when the problem is beyond his competence and report the problem to suitably qualified and competent personnel		3	1	2
	PC12. Diagnose the problem		2	0	2
	PC13. Handle and dispose waste based on environmental guidelines at the work place		4	1	3
	PC14. Follow reporting procedures as laid down by the employer		2	0	2
	PC15. Complete all documentation in the prescribed standards in a timely manner		2	0	2
	PC16. Report and escalate problems/ incidents as required in a timely manner		2	0	2
	PC17. Report defects precisely to the supervisor if beyond scope of his role		2	0	2
		Total	50	6	44
4. IES/N7601Comply with worksite health and safety guidelines	PC1. Comply with safety, health, security and environment related regulations/ guidelines at the work site	30	3	1	2
	PC2. Use Personal Protective Equipment (PPE) and other safety gear such as seat belt, body protection, respiratory protection, eye protection, ear protection and hand protection		4	1	3

	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		2	0	2
	PC4. Carry out operations as per the manufacturer's and worksite related health and safety guidelines		3	1	2
	PC5. Handle the transport, storage and disposal of hazardous materials and waste in compliance with worksite health, safety and environmental guidelines		4	1	3
	PC6. Follow safety regulations and procedures with regard to worksite hazards and risks		2	0	2
	PC7. Operate various grades of fire extinguishers, as applicable		3	0	3
	PC8. Support in administering basic first aid and report to concerned team members, as required, in case of an accident		3	1	2
	PC9. Respond promptly and appropriately to an accident/incident or emergency situation, within limits of your role and responsibility		2	0	2
	PC10. Record and report details related to operations, incidents or accidents, as applicable		4	1	3
		Total	30	6	24

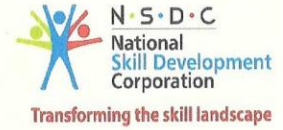
Annexure2

Trainer Pre-requisites for Job role: “Compactor Operator”
Mapped to Qualification Pack: “IESC/Q0106 Version 1.0”

Sr. No	Area	Details
1	Description	To deliver accredited training service, mapping to the curriculum detailed above, in accordance with the Qualification Pack <u>“IES/Q0106 Version 1.0”</u> .
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 th . Desirable Class 10 th
4a	Domain Certification	Certified for Job Role: <u>“Compactor Operator”</u> mapped to QP: <u>“IES/Q0106 – Version 1.0”</u> . Minimum accepted score 70%. Desired: Certification Training in Compactor Operations
4b	Platform Certification	Certified for Job Role: <u>“Compactor Trainer”</u> mapped to Qualification Pack: SSC/1402. Minimum accepted score 70%.
5	Experience	<ul style="list-style-type: none"> • Around 3 to 4 year’s site experience in compactor operations. • Desirable: Should have conducted O and M programs at work sites.



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Certificate

CURRICULUM COMPLIANCE TO QUALIFICATION PACK – NATIONAL OCCUPATIONAL STANDARDS

is hereby issued by the

INFRASTRUCTURE EQUIPMENT SKILL COUNCIL

for the

MODEL CURRICULUM

Complying to National Occupational Standards of
Job Role/ Qualification Pack: 'Compactor Operator' QP No. 'IES/ Q 0106 NSQF Level 4'

Date of Issuance: March 31st, 2015
Valid up to: March 31st, 2017


Authorised Signatory
(Infrastructure Equipment Skill Council)



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