



Model Curriculum

Iron & Steel – Dumper Operator

SECTOR: IRON & STEEL
**SUB-SECTOR: STEEL SPONGE IRON, FERRO ALLOYS,
RE-ROLLERS, REFRACTORY**
OCCUPATION: Driving
REF ID: ISC/Q0403
NSQF LEVEL: 4



  

Certificate

**CURRICULUM COMPLIANCE TO
QUALIFICATION PACK – NATIONAL OCCUPATIONAL
STANDARDS**

is hereby issued by the

INDIAN IRON AND STEEL SECTOR SKILL COUNCIL

for the

MODEL CURRICULUM

Complying to National Occupational Standards of
Job Role/ Qualification Pack: 'Dumper Operator' QP No. 'ISC/Q0403 NSQF Level 4'

Date of issuance: **December 22nd, 2015**
Valid up to: **December 21st, 2016**

** Valid up to the next review date of the Qualification Pack*


Authorised Signatory
(Indian Iron and Steel Sector Skill Council)



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IRON & STEEL - DUMPER OPERATOR

CURRICULUM / SYLLABUS

This program is aimed at training candidates for the job of a “Iron & Steel - Dumper Operator”, in the “Iron & Steel” Sector/Industry and aims at building the following key competencies amongst the learner.

Program Name	Iron & Steel - Dumper Operator		
Qualification Pack Name & Reference ID.	Iron & Steel - Dumper Operator ISC/Q0403		
Version No.	1.0	Version Update Date	30-12-2014
Pre-requisites to Training	8th standard or literate with 3 years of experience in driving heavy vehicles preferably Driving license mandatory		
Training Outcomes	After completing this programme, participants will be able to: <ul style="list-style-type: none"> • Prepare dumper for operations • Perform dumper operations • Perform basic maintenance and troubleshooting on dumper • Carry out reporting and logging • Health and Safety 		

This course encompasses 5 out of 5 National Occupational Standards (NOS) of “Iron & Steel - Dumper Operator” Qualification Pack issued by “Indian Iron & Steel Sector Skill Council”.

Sr. No.	Module	Key Learning Outcomes	Equipment Required
1	Over view of Iron & Steel Industry Theory Duration (hh:mm) 04:00 Practical Duration (hh:mm) 00:00 Corresponding NOS Code	<ul style="list-style-type: none"> • Understanding Iron & steel industry • Understanding types of Iron & Steel Industry • Understanding products of Iron & Steel industry • Activities in Iron & Steel Industry 	PPTs of Iron and steel manufacturing, Charts showing the same
2	Occupational, Health and Safety (OHAS) Theory Duration (hh:mm) 08:00 Practical Duration (hh:mm) 12:00 Corresponding NOS Code	<ul style="list-style-type: none"> • Understanding the Occupational health & Safety • Understand What is hazard • Documentation for Health and safety • Working at Heights, confined spaces • Remedies for fire at work place 	PPTs for OHAS related to Job Role, Display Material for PPEs related to Job Role, Safety Material

Sr. No.	Module	Key Learning Outcomes	Equipment Required
3	<p>ISC/N0434</p> <p>5S & House keeping</p> <p>Theory Duration (hh:mm) 08:00</p> <p>Practical Duration (hh:mm) 16:00</p> <p>Corresponding NOS Code ISC/N0434</p>	<ul style="list-style-type: none"> • Identification of bottlenecks in functioning of work place • Various methods of housekeeping both pre-work & post-work as well 	<p>PPTs of 5S, Display Charts of 5S, Audit Checklists of 5S</p>
4	<p>Prepare dumper for operations</p> <p>Theory Duration (hh:mm) 25:00</p> <p>Practical Duration (hh:mm) 70:00</p> <p>Corresponding NOS Code ISC/N0407</p>	<ul style="list-style-type: none"> • Conduct pre-operation checks to ensure the Dumper is safe to use • Conduct pre-operation routine maintenance of Dumper 	<p>PPTs for various types of drawings, dumper, grease, oil, coolant, Instrument panel, Controls, levers and switches, hydraulic systems in dumpers, Service brakes and parking brakes</p>
5	<p>Perform dumper operations</p> <p>Duration (hh:mm) 30:00</p> <p>Practical Duration (hh:mm) 78:00</p> <p>Corresponding NOS Code ISC/N0408</p>	<ul style="list-style-type: none"> • Starting and driving the Dumper safely to the operations area • Loading and hauling the load to the designated destination • Discharging the load in correct way by tipping the dump with careful manoeuvring of hoist lever 	<p>Dumper, grease, oil, coolant, Instrument panel, Controls, levers and switches, hydraulic systems in dumpers, Service brakes and parking brakes</p>
6	<p>Performing routine maintenance and troubleshooting</p> <p>Theory Duration (hh:mm) 35:00</p> <p>Practical Duration (hh:mm) 110:00</p> <p>Corresponding NOS Code</p>	<ul style="list-style-type: none"> • Routine maintenance in accordance with the manufacturer's recommendations and company procedures • Basic diagnostics and Troubleshooting 	<p>Dumper, grease, oil, coolant, Instrument panel, Controls, levers and switches, hydraulic systems in dumpers, Service brakes and parking brakes</p>



Sr. No.	Module	Key Learning Outcomes	Equipment Required
	ISC/N0409		
7	Carry out reporting and logging Duration (hh:mm) 12:00 Practical Duration (hh:mm) 15:00 Corresponding NOS Code ISC/N0410	<ul style="list-style-type: none"> Reporting of problem/incidents Reporting and Documentation 	Sample Accident reports
8	Health and safety Duration (hh:mm) 12:00 Practical Duration (hh:mm) 15:00 Corresponding NOS Code ISC/N0434	<ul style="list-style-type: none"> Health and safety procedures Fire safety procedures Emergencies, rescue and first aid procedures Health and safety measures critical for workers in a steel plant 	PPE, Different Type of Safety Sign, First Aid Box, Safety instrument and clothing, Step Ladder, Sample Accident reports, Fire Extinguishers, Items required for fire extinguisher and fire Safety
	Total Duration Theory Duration 134:00 Practical Duration 316:00	Unique Equipment Required: <ul style="list-style-type: none"> Mechanical Drawings, Blueprints Basic Tools and Equipment's measuring tools& precision measurement tools Dumper Material and Equipment for cleaning, lifting machines PPE, Safety Sign, First Aid Box, Fire Extinguishers 	

Grand Total Course Duration: **450Hours, 0 Minutes**

(This syllabus/ curriculum has been approved by **Indian Iron and Steel Sector Skills Council**)



Trainer Prerequisites for Job role: “Iron & Steel - Dumper Operator” mapped to Qualification Pack: “ISC/Q0403”

Sr. No.	Area	Details
1	Description	To deliver accredited training service, mapping to the curriculum detailed above, in accordance with the Qualification Pack “ISC/Q0403”.
2	Personal Attributes	Aptitude for conducting training, and pre/ post work to ensure competent, employable candidates at the end of the training. Strong communication skills, interpersonal skills, ability to work as part of a team; a passion for quality and for developing others; well-organised and focused, eager to learn and keep oneself updated with the latest in the mentioned field.
3	Minimum Educational Qualifications	Min. ITI Fitter pass and preferably CTI/ATI cleared/ Diploma Mechanical
4a	Domain Certification	Certified for Job Role: “Iron & Steel - Dumper Operator” mapped to QP: “ISC/Q0403”. Minimum accepted score is 80%
4b	Platform Certification	Recommended that the Trainer is certified for the Job Role: “Trainer”, mapped to the Qualification Pack: “SSC/1402”. Minimum accepted score is 80%
5	Experience	Min. 5 years industry experience and minimum 2 years’ experience as Trained or un trained for same Job Role/ Trade



Annexure: Assessment Criteria

Assessment Criteria	
Job Role	Iron & Steel - Dumper Operator
Qualification Pack	ISC/Q0403
Sector Skill Council	Indian Iron & Steel Sector Skill Council

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 below)
4	Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training centre based on these criteria.
5	To pass the Qualification Pack , every trainee should score a minimum of 60% in every NOS.
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.

Assessment outcome (nos)	Assessment criteria	Total marks	Out of	Marks allocation	
				Theory	Skills practical
ISC/N0407: Prepare dumper for operations	PC1. Adhere to time limits given by supervisor	250	5	0	5
	PC2. Check oil levels of engine, transmission, radiator coolant and brake		15	5	10
	PC3. Check differential and hydraulic oil levels		20	5	15
	PC4. Check the hydraulic hose and ram for leakages		15	5	10
	PC5. Check condition of parking brake, main horn, reverse horn, and head light.		15	5	10
	PC6. Check the various controls, gauges, warning lamp and other safety devices		15	5	10



Assessment outcome (nos)	Assessment criteria	Total marks	Out of	Marks allocation	
				Theory	Skills practical
	PC7. Check fan belt tension, electrolyte level and terminal tightness		20	5	15
	PC8. Check and adjust driving position, rear and side mirrors, seat belts		15	5	10
	PC9. Clean air filter dust bowls		15	5	10
	PC10. Drain water and sediment from the fuel tank		15	5	10
	PC11. Top up coolant and oil in engine, transmission, etc. if necessary		15	5	10
	PC12. Apply grease to all greasing pins and pivot points		20	5	15
	PC13. Ensure the locking bar is in position to prevent the front and rear chassis moving and creating a crushing zone (articulated machines only)		15	5	10
	PC14. Keep footplates and steps clean and free from mud, dirt and oil		15	5	10
	PC15. Maintain a checking/maintenance logbook to record all activities performed before starting the Excavator		20	5	15
	PC16. Report defects precisely to the supervisor if beyond scope of his role		15	10	5
	NOS Total Marks	Total	250	75	175
ISC/N0408: Perform dumper operations	PC1. Plan and organize the job according to given instructions	300	10	5	5
	PC2. Inspect the worksite to identify any loose soil, hidden deep trenches or marshy patches where dumper could get stuck.		10	5	5



Assessment outcome (nos)	Assessment criteria	Total marks	Out of	Marks allocation	
				Theory	Skills practical
	PC3. Start the engine using the pushbutton switch and key switch together		10	5	5
	PC4. Use the priming pump and pre-heater to start the engine in cold weather conditions		10	5	5
	PC5. Always wear safety belt while driving		10	5	5
	PC6. Ensure proper functioning of rear view camera and audio visual alarm		15	5	10
	PC7. Not use mobile phones while driving		15	5	10
	PC8. Look out for people working and hazards such as trenches, potholes and cables		15	5	10
	PC9. Operate the shifting quadrant device for selecting the correct gear range		15	5	10
	PC10. Ensure dumper load and operating speed is within limits specified by the manufacturer.		15	5	10
	PC11. Adhere to time limits given by supervisor		5	0	5
	PC12. Follow the traffic rule / codes developed locally		15	5	10
	PC13. Perform in-operation visual checks on critical temperature and pressure gauges.		15	5	10
	PC14. Ensure that walkway rules e.g. operating the Dumper within the permissible/allocated areas are followed		15	5	10
	PC15. Utilize judiciously various signalling devices available in the dumper such as turn signal, parking indicator, air horn etc.		20	5	15



Assessment outcome (nos)	Assessment criteria	Total marks	Out of	Marks allocation	
				Theory	Skills practical
	PC16. Keep a safe distance from a tip edge and use an approved stop block before tipping over an edge		15	5	10
	PC17. Select and use the right type of brake in different situations and conditions.		20	5	15
	PC18. Inform supervisor of any problems while operating the Dumper		5	0	5
	PC19. Ensure that dumper is always parked on firm, level ground; with handbrake applied and drive and controls disengaged		15	5	10
	PC20. Operate the body hoist control handle to manoeuvre the hydraulic ram that tips the dumper		15	5	10
	PC21. Discharge the load safely at the position and in the manner designated by the supervisor		20	5	15
	PC22. Ensure that no other operators travel on or stand near the Dumper		15	5	10
	NOS Total Marks	Total	300	100	200
ISC/N0409: Performing routine maintenance and troubleshooting	PC1. Track machine operating hours to assess the right service schedule.	200	15	5	10
	PC2. Clean air filter dust bowls		15	5	10
	PC3. Clean footplates, pedals and steps free from mud, dirt, ice and snow		15	5	10
	PC4. Drain water and sediment /fuel separators		15	5	10



Assessment outcome (nos)	Assessment criteria	Total marks	Out of	Marks allocation	
				Theory	Skills practical
	PC5. Replenish coolants, lubricants and fluids		20	5	15
	PC6. Grease all greasing pins and pivot points		20	5	15
	PC7. Check battery levels and condition of the terminals and carrying out minor adjustments if required		20	5	15
	PC8. Check and maintain the tyre rims, air pressure, wheel nuts and treads		20	5	15
	PC9. Assess when the problem is beyond his competence and report the problem to suitably qualified and competent personnel		15	5	10
	PC10. Ensure the machine is on firm and level ground before attempting to carry out any maintenance activity.		15	5	10
	PC11. Ensure the locking bar is in position to prevent the front and rear chassis moving and creating a crushing zone (articulated machines only)		20	5	15
	PC12. Ensure that no maintenance task on the engine is performed when running or still hot		10	5	5
	NOS Total Marks	Total	200	60	140
ISC/N0410: Carry out reporting and logging	PC1. Report problems/incidents as applicable in a timely manner	100	15	5	10
	PC2. Report to the appropriate authority as laid down by the employer		15	5	10
	PC3. Follow reporting procedures as prescribed by the employer		10	0	10
	PC4. Identify documentation to be completed relating to one's role		15	5	10



Assessment outcome (nos)	Assessment criteria	Total marks	Out of	Marks allocation	
				Theory	Skills practical
	PC5. Record details accurately using the appropriate format		15	5	10
	PC6. Complete all documentation within stipulated time.		15	5	10
	PC7. Ensure documents are available to appropriate authorities to inspect		15	5	10
	NOS Total Marks	Total	100	35	65
ISC/N0434: Health and safety	PC1. Perform storage and transport of hazardous materials compliant with safety guidelines	150	20	5	15
	PC2. Deal with misfires as per statutory requirement		15	5	10
	PC3. Comply with safety regulations and procedures in case of fire hazard and refueling		20	5	15
	PC4. Operate various grades of fire extinguishers		20	5	15
	PC5. Work responsibly and as safe and careful as possible so as not to put the health and safety of self or others at risk, including members of the public		20	5	15
	PC6. Emergency organisation of the specific work site.		20	5	15
	PC7. Identify characteristics of liquid metal, liquid slag, fumes, gas pipelines, etc. and take necessary precautions		20	10	10
	PC8. Wears safety gear such as hard hat, respiratory protection, eye protection, ear protection		15	5	10
	NOS Total Marks	Total	150	45	105



Assessment outcome (nos)	Assessment criteria	Total marks	Out of	Marks allocation	
				Theory	Skills practical
	Grand Total	1000	1000	315	685
	Percentage Weightage:			50%	50%
	Minimum Pass% to qualify (aggregate):			60%	