



Model Curriculum

Process Operator Rolling Mills

SECTOR: IRON & STEEL
SUB-SECTOR: STEEL, RE-ROLLERS

OCCUPATION: Cold Rolling Mill

REF ID: ISC/Q0701

NSQF LEVEL: 5



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: **Process Operator** OP No. **ISC/Q0701 NSQF Level 5**
Rolling Mills

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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PROCESS OPERATOR ROLLING MILLS

CURRICULUM / SYLLABUS

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

Program Name	Process Operator Rolling Mills		
Qualification Pack Name & Reference ID.	Process Operator Rolling Mills ISC/Q0701		
Version No.	1.0	Version Update Date	30-12-2014
Pre-requisites to Training	Minimum qualification – ITI Pass		
Training Outcomes	After completing this programme, participants will be able to: <ul style="list-style-type: none"> • Prepare for operation of control systems • Perform operation of control systems • Use basic health and safety practices at the workplace • Work effectively with others and manage team members 		

This course encompasses 4 out of 4 National Occupational Standards (NOS) of “Process Operator Rolling Mills” 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) 12:00 Practical Duration (hh:mm) 20:00 Corresponding NOS	<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
	Code ISC/N0008		
3	5S & House keeping Theory Duration (hh:mm) 12:00 Practical Duration (hh:mm) 20:00 Corresponding NOS Code ISC/N0004	<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 	PPTs of 5S, Display Charts of 5S, Audit Checklists of 5S
4	Prepares for operation of control systems Theory Duration (hh:mm) 30:00 Practical Duration (hh:mm) 78:00 Corresponding NOS Code ISC/N0706	<ul style="list-style-type: none"> • Inspect the incoming coil according to specifications as laid out in writing or designed for on –line viewing and understand the given job as per schedule /sequence • Load the coil for operation 	PPTs for various types of drawings, Blue prints, Coil, welding equipments, metal forming equipments Hand tools and various measuring instruments
5	Performs operation of control systems Duration (hh:mm) 45:00 Practical Duration (hh:mm) 125:00 Corresponding NOS Code ISC/N0707	<ul style="list-style-type: none"> • Check that the strip matches planned/designed specifications • Give appropriate commands for operation • Prepare and dispatch for next operation 	Coil, welding equipments, metal forming equipments Hand tools and various measuring instruments
6	Use basic health and safety practices at the workplace Duration (hh:mm) 12:00 Practical Duration (hh:mm) 20:00	<ul style="list-style-type: none"> • Health and safety procedures • Fire safety procedures • Emergencies, rescue and first aid procedures 	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



Sr. No.	Module	Key Learning Outcomes	Equipment Required
	Corresponding NOS Code ISC/N0008		
7	Work effectively with others and manage team members Duration (hh:mm) 12:00 Practical Duration (hh:mm) 20:00 Corresponding NOS Code ISC/N0096	<ul style="list-style-type: none">• Ensure engagement of team members through on-the job handholding & support• Demonstrate effective behaviours for team work	Communication skills PPTs, Posters Team management posters
	Total Duration Theory Duration 127:00 Practical Duration 283:00	Unique Equipment Required: <ul style="list-style-type: none">• Mechanical Drawings, Blueprints,• Basic Tools and Equipment's,• measuring tools& precision measurement tools,• Assembling tools• Material and Equipment for cleaning, lifting machines• PPE, Safety Sign, First Aid Box, Fire Extinguishers	

Grand Total Course Duration: **410Hours, 0 Minutes**

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



Trainer Prerequisites for Job role: “Process Operator Rolling Mills” mapped to Qualification Pack: “ISC/Q0701”

Sr. No.	Area	Details
1	Description	To deliver accredited training service, mapping to the curriculum detailed above, in accordance with the Qualification Pack “ISC/Q0701”.
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: “Process Operator Rolling Mills” mapped to QP: “ISC/Q0701”. 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	Process Operator Rolling Mills
Qualification Pack	ISC/Q0701
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/N0706: Prepares for operation of control systems	PC1. Read and understand the specifications of the job to be carried out	200	20	5	15
	PC2. Inspect the incoming coil for dimensions, telescopicity, quality/ physical defect according to the process chart and ensure they tally with PDI (Primary Data Input)		30	5	25
	PC3. Take necessary actions to get any deviations from specifications corrected		20	5	15
	PC4. Report any issues that may be out of his/her scope to supervisor		15	0	15



Assessment outcome (nos)	Assessment criteria	Total marks	Out of	Marks allocation	
				Theory	Skills practical
	PC5. Understand how to load the coil on the rolling system correctly		25	5	20
	PC6. Load or stack the coil(s) for conducting the operation, as appropriate		20	0	20
	PC7. Arrange the coil as per diameter and width to ensure correct placement		25	5	20
	PC8: Maintain the continuity of operation by welding the forward coil with the trailing coil, where appropriate		45	5	40
	NOS Total Marks	Total	200	30	170
ISC/N0707: Performs operation of control systems	PC1. Check and compare the specifications of the coil with those in system/record and ensure correctness of the requirement	550	70	20	30
	PC2. Set appropriate parameters (like pressure, current, speed, time-temperature cycle, fillage, concentration, tension etc.) as applicable for welding / pickling/ rolling/ annealing/ electrolytic cleaning/galvanising according to coil specifications and give command for carrying out the operation		250	50	200
	PC3. Monitor the process parameters during operation e.g. RPM, temperature, line- tension, pressure, concentration, line-speed, fillage, coating thickness, etc.		120	20	100



Assessment outcome (nos)	Assessment criteria	Total marks	Out of	Marks allocation	
				Theory	Skills practical
	PC4. Give necessary commands for the next operation (coil cooling, skin-passing, drying, side trimming, chromating, logo printing, oiling etc. as appropriate)		60	10	50
	PC5. Unload the coil, recoil, weigh, strap, label and dispatch to the next station		30	0	30
	PC6. Report any issues to the supervisor that may be beyond his/her scope		20	5	15
	NOS Total Marks	Total	550	105	445
ISC/N0008: Use basic health and safety practices at the workplace	PC1. Use protective clothing/equipment for specific tasks and work conditions	150	9	4	5
	PC2. State the name and location of people responsible for health and safety in the workplace		6	1	5
	PC3. State the names and location of documents that refer to health and safety in the workplace		2	1	1
	PC4. Identify job-site hazardous work and state possible causes of risk or accident in the workplace		8	4	4
	PC5. Carry out safe working practices while dealing with hazards to ensure the safety of self and others state methods of accident prevention in the work environment of the job role		6	1	5
	PC6. State location of general health and safety equipment in the workplace		6	1	5



Assessment outcome (nos)	Assessment criteria	Total marks	Out of	Marks allocation	
				Theory	Skills practical
	PC7. Inspect for faults, set up and safely use steps and ladders in general use		6	1	5
	PC8. Work safely in and around trenches, elevated places and confined areas		6	1	5
	PC9. Lift heavy objects safely using correct procedures		6	1	5
	PC10. Apply good housekeeping practices at all times		2	1	1
	PC11. Identify common hazard signs displayed in various areas		6	5	1
	PC12. Retrieve and/or point out documents that refer to health and safety in the workplace		5	1	4
	PC13. Use the various appropriate fire extinguishers on different types of fires correctly		9	4	5
	PC14. Demonstrate rescue techniques applied during fire hazard		8	4	4
	PC15. Demonstrate good housekeeping in order to prevent fire hazards		2	1	1
	PC16. Demonstrate the correct use of a fire extinguisher		6	1	5
	PC17. Demonstrate how to free a person from electrocution		6	1	5



Assessment outcome (nos)	Assessment criteria	Total marks	Out of	Marks allocation	
				Theory	Skills practical
	PC18. Administer appropriate first aid to victims as required e.g. in case of bleeding, burns, choking, electric shock, poisoning etc.		8	3	5
	PC19. Demonstrate basic techniques of bandaging		6	1	5
	PC20. Respond promptly and appropriately to an accident situation or medical emergency in real or simulated environments		7	2	5
	PC21. Perform and organize loss minimization or rescue activity during an accident in real or simulated environments		6	1	5
	PC22. Administer first aid to victims in case of a heart attack or cardiac arrest due to electric shock, before the arrival of emergency services in real or simulated cases		6	1	5
	PC23. Demonstrate the artificial respiration and the CPR Process		6	1	5
	PC24. Participate in emergency procedures		6	1	5
	PC25. Complete a written accident/incident report or dictate a report to another person, and send report to person responsible		4	1	3
	PC26. Demonstrate correct method to move injured people and others during an emergency		2	1	1



Assessment outcome (nos)	Assessment criteria	Total marks	Out of	Marks allocation	
				Theory	Skills practical
	NOS Total Marks	Total	150	45	105
ISC/N0096: Work effectively with others and manage team members	PC1. Accurately receive, absorb and share information and instructions from the supervisor and fellow workers, getting clarification where required	100	5	0	5
	PC2. Display appropriate communication etiquette while working		10	0	10
	PC3. Display active listening skills while interacting with others at work		10	0	10
	PC4. Use appropriate tone, pitch and language to convey politeness, assertiveness, care and professionalism		5	0	5
	PC5. Display helpful behaviour by assisting others in performing tasks in effective manner		10	0	10
	PC6. Consult with and assist others to maximize effectiveness and efficiency in carrying out tasks		10	0	10
	PC7. Demonstrate responsible and disciplined behaviours at the workplace		5	0	5
	PC8. Escalate grievances and problems to superiors		5	0	5
	PC9. Communicate day-to-day objectives, instructions etc. to team members		15	5	10



Assessment outcome (nos)	Assessment criteria	Total marks	Out of	Marks allocation	
				Theory	Skills practical
	PC10. Guide the team members to manage day-to-day issues at work		5	0	5
	PC11. Gather concerns, feedback from team members and convey them to appropriate authorities		15	5	10
	PC12. Escalate grievances and problems to superiors		5	0	5
	NOS Total Marks	Total	100	10	90
	Grand Total	1000	1000	190	810
	Percentage Weightage:			50%	50%
	Minimum Pass% to qualify (aggregate):			60%	