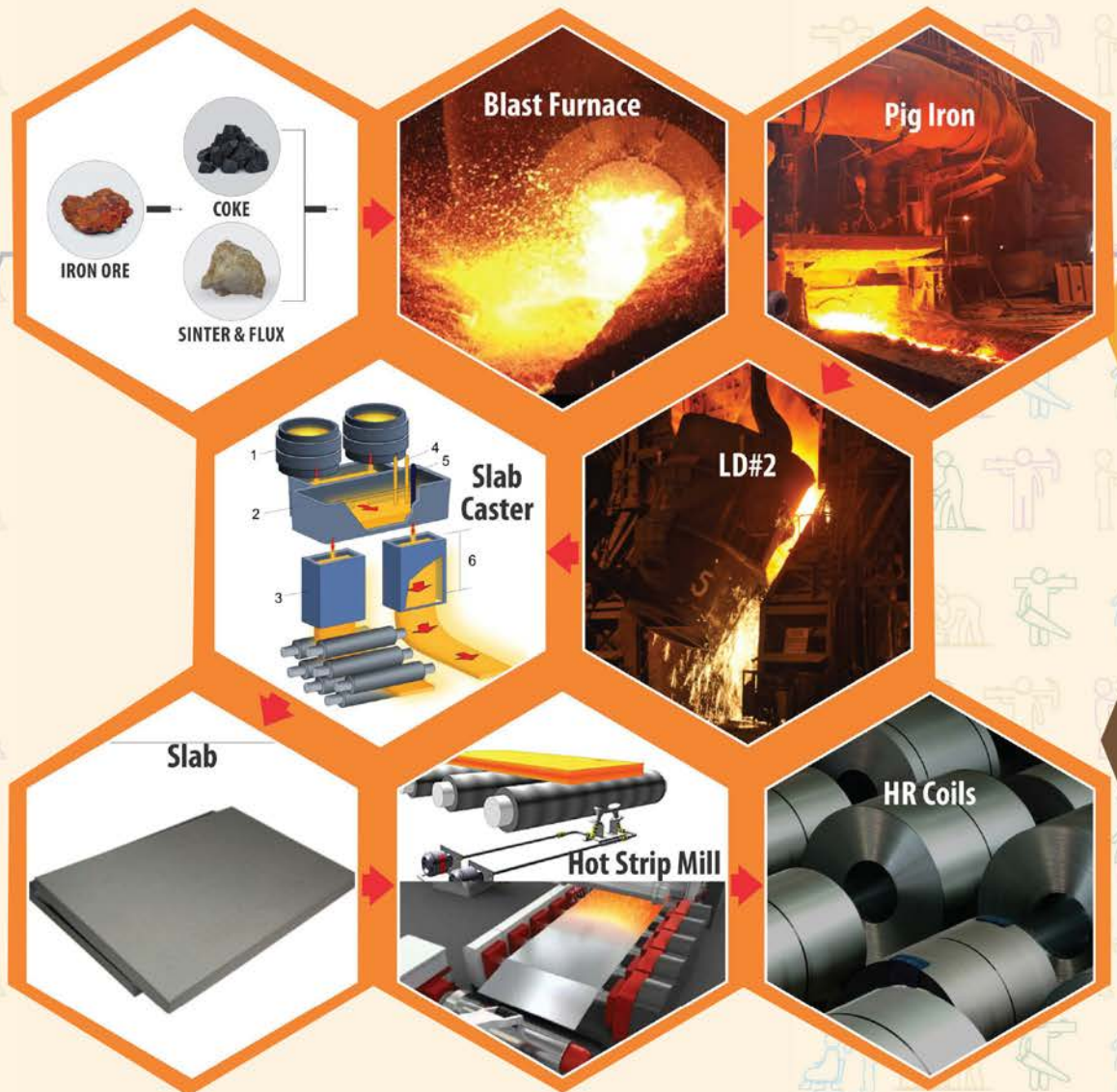


Catalogue of Qualification Packs (QPs)

Sector
Iron & Steel



Catalogue of Qualification
Packs (QPs)

FOREWORD

The Indian Iron & Steel Sector Skill Council (IIS SSC), is an industry (Iron & Steel, Re-rolling, Sponge Iron units, Ferro Alloys, Foundries, Steel Construction and Welding) driven non-profit company limited by Guarantee, registered under the Indian Companies Act, 1956. The company is promoted by Institute for Steel Development & Growth (INSDAG) and Bengal Chambers of Commerce & Industry (BCC&I) and mandated under National Skill Development Corporation (NSDC).

In today's age of globalization and technically mutated world, skill building is an important weapon to boost the efficiency and the quality of services for the advanced productivity and economic growth. India is today one of the youngest nations in the world with more than 62% of the population in the working age group (15-59 years), and more than 54% of the total population below 25 years of age. The opportunity to reap the benefits of “demographic dividend” has to be utilized only with the skilled workforce. Evidently, apart from meeting its own demand, India has the potential to become the worldwide hub for outsourcing skilled manpower.

Major section of the workforce is not directly employable, but trainable. Therefore, the role of skill development becomes critical in enhancing employment opportunities and addressing the demand supply gap.

Industries are facing shortage of skilled manpower. The Council envisages imparting short term skilling of the incremental numbers of the employees as well as up-scaling or re-skilling existing of the employees. The training also enables the employees to map their competence level aligned with NSQF levels.

Skill Development as a part of “Skill Mission” of Government of India has been given special thrust by Ministry of Skill Development through NSDC and Sector Skill Councils under it to recognise the skill gap in each sector and meeting it through developing Qualification Package (QP) through various National Occupational Standards (NOS) for all the critical and major functional areas and arranging training, assessment and certification.

Accordingly IIS SSC has created 72 Qualification Packs (QPs) for various Job Roles for the Iron and Steel Industries in line with National Skill Qualification Framework, out of which 49 Job Roles are approved by NSDC and 11 related job roles are adopted from other councils. I am happy to bring out an up-to-date catalogue of 60 IIS SSC Qualification Pack (QPs)s after adding the latest job roles of Foundry sector. The training materials in QPs have been prepared based on IIS SSC's efforts, knowledge and experience of institutes and industries. Further the manuals are published only after getting the same properly reviewed by independent experts. IIS SSC's obligations are dedicated to provide technical value to our members and users of these publications. These books besides being good library collection are also useful in solving real-life

situations in industries and upgrading knowledge of employees. In this catalogue for convenience of the readers, Qualification Packs (QPs) are grouped into "Occupation-wise", giving the brief description of the job, qualification required of the candidate, total trading hours (both theoretical and practical).

Those organisations who are not a member of IIS SSC, I would strongly urge you to take membership. By being a valued member you will get several benefits from IIS SSC, a few of which are , reduction of in-house training costs, reduced labour costs and information of availability of trained manpower, higher productivity of workplace, reduction of health hazards and improved safety standards, up-skilling of existing employees, help and technical support from IIS SSC for setting up of in-house training centres, networking platform to meet and network with industry partners etc.

This catalogue is also available on IIS SSC website (www.iissc.org) and downloadable. I hope that this will meet the desired requirements. I look forward to your valued opinions/suggestions for improving and furthering the objectives of IIS SSC.

I would like to put on records the efforts put in by our Technical expert Shri Pranab Kumar Ghosh Consultant IIS SSC and former General Manager SAIL, Smt. Varsha Tibrewal Sr. Executive (Training & Operations) and Dr. Dhruba Bhaduri and Shri Santanu Bhui, Jr. Executive (Training & Operations) for publication of this book.



(Sushim Banerjee)
CEO

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CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Lancing & Scarfing Operator (ISC/Q0304)

Occupation	Operations
Sub-sector	Iron Making
Role Description	The job is all about carry out lancing & scarfing operations in the steel plant.
NSQF Level	3
Minimum Educational Qualifications	Class 8th pass, preferably
Training (Suggested but not mandatory)	Practical / on-site training of three (3) months with basic theoretical inputs on the details of the operation of lancing & scarfing
Training Duration: Theory (Hours) Practical (Hours) Total Duration	150 Hrs 350 Hrs 500 Hrs
Experience	Six (6) months experience in similar function under an experienced operator before being put in independent charge of the actual operation
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> 1. ISC/N0306: Carry out lancing operations 2. ISC/N0307: Carry out scarfing operations 3. ISC/N0008: Use basic health and safety practices at the workplace 4. ISC/N0009: Work effectively with others

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Mobile Equipment Operator (ISC/Q0401)

Occupation	Iron Making
Sub-sector	Steel, Sponge Iron, Ferro Alloys, Re-Rollers, Refractory
Role Description	The job involves inspection (according to a checklist) of mobile equipment like Fork Lift, Skid-loader/Bob Cat, Pay Loader and JCB as used in Steel Plant for proper working condition, loading & driving the vehicle for carrying materials from one place to another. This also involves carrying out basic maintenance of the equipment.
NSQF Level	3
Minimum Educational Qualifications	Class X pass
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> • Technical and gallery/hand-held training • Refresher training if absent from works for a period of one year or more before re-employment • Must possess licence for heavy vehicle driving • Basic maintenance and troubleshooting • 2 weeks hands on training in steel plant (mandatory) • Safety practices
Training Duration:	
Theory (Hours)	111 Hrs
Practical (Hours)	239 Hrs
Total Duration	350 Hrs
Experience	<ul style="list-style-type: none"> • Minimum 1 year of loading, driving & unloading experience with the vehicles • In lieu of minimum qualification the incumbent should have minimum 3-4 years of experience of driving heavy vehicles
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> 1. ISC/N0401: Prepare the vehicle 2. ISC/N0402: Perform mobile equipment operations 3. ISC/N0403: Perform basic maintenance and troubleshooting of the mobile equipments 4. ISC/N0008: Use basic health & safety practices at work place 5. ISC/N0009: Works effectively with others

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Locomotive Driver (ISC/Q0402)

Occupation	Iron Making
Sub-sector	Steel
Role Description	Operating the locomotive to ensure movement of raw materials, intermediates, finished products within the plant. Maintaining the log book for performance parameters and working condition of locomotive.
NSQF Level	4
Minimum Educational Qualifications	Class X pass
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> • One month training in the Loco shop • Routine Inspection of locomotive • Understanding of traffic signals • 5S and safety practices
Training Duration:	<p>Theory (Hours) 137 Hrs</p> <p>Practical (Hours) 303 Hrs</p> <p>Total Duration 440 Hrs</p>
Experience	<ul style="list-style-type: none"> • 0-1 years of driving experience and minimum 100 hours hands on experience with 10th pass • In lieu of minimum qualification the incumbent should not be considered for this role
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> 1. ISC/N0404: Inspect critical systems of locomotive 2. ISC/N0405: Operate locomotive to carry material 3. ISC/N0008: Use basic health and safety practices at the workplace 4. ISC/N0009: Works effectively with others

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Iron & Steel - Dumper Operator (ISC/Q0403)

Occupation	Iron Making
Sub-sector	Steel, Sponge Iron, Ferro Alloys, Re-Rollers, Refractory
Role Description	This role holder is responsible for transporting material using dumper
NSQF Level	4
Minimum Educational Qualifications	8th standard or literate with 3 years of experience in driving heavy vehicles preferably Driving license compulsory
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> • Technical and gallery training • Refresher training if absent from work site for a period of one year or more before re-employment
Training Duration:	Theory (Hours) 134 Hrs Practical (Hours) 316 Hrs Total Duration 450 Hrs
Experience	In lieu of minimum qualification, the incumbent should have 5 years' experience of driving heavy vehicles. Must have driving license and no previous history of accidents.
Applicable National Occupational Standards (NOS)	1. ISC/N0407: Prepare dumper for operations 2. ISC/N0408: Perform dumper operations 3. ISC/N0409: Perform basic maintenance and troubleshooting on dumper 4. ISC/N0410: Carry out reporting and logging 5. ISC/N0434: Health and Safety

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Excavator Operator (ISC/Q0404)

Occupation	Iron Making						
Sub-sector	Steel, Sponge Iron, Ferro Alloys, Re-Rollers, Refractory						
Role Description	Drives and controls an excavating machine which is a selfpropelled machine used to dig and dump above the base level of the machine						
NSQF Level	3						
Minimum Educational Qualifications	Class X / literate with 3 years of experience Driving license mandatory preferably						
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> • Technical and gallery training • Refresher training if absent from works for a period of one year or more before re-employment 						
Training Duration:	<table> <tr> <td>Theory (Hours)</td><td>133 Hrs</td></tr> <tr> <td>Practical (Hours)</td><td>313 Hrs</td></tr> <tr> <td>Total Duration</td><td>446 Hrs</td></tr> </table>	Theory (Hours)	133 Hrs	Practical (Hours)	313 Hrs	Total Duration	446 Hrs
Theory (Hours)	133 Hrs						
Practical (Hours)	313 Hrs						
Total Duration	446 Hrs						
Experience	In lieu of minimum qualification, the incumbent should have 5 years' experience of driving heavy vehicles. Must have driving license and no previous history of accidents						
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> 1. ISC/N0411: Prepare excavator for operations 2. ISC/N0412: Perform excavator Operations 3. ISC/N0413: Perform basic maintenance and troubleshooting on excavator 4. ISC/N0414: Carry out reporting and logging 5. ISC/N0434: Health and Safety 						

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Cast House Junior Operator (IISC/Q0406)

Occupation	Iron Making
Sub-sector	Steel
Role Description	The job is about cleaning /preparation of the cast house, hot metal/slag runners, preparation of mud-gun/tap hole drill machine, making tap hole and metal runners, proper heating etc. before the cast. This also involves tap hole maintenance/preparation, though preparation, metal/slag runner preparation, diamond crossing preparation, diamond crossing preparation, mud gun cleaning/filling, drill bar/poking rod changing, spout jam removal, maintain housekeeping, making hook, poking rod, clay spoon, dali etc.
NSQF Level	2
Minimum Educational Qualifications	Class 8th Pass preferably
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> • Reading and writing report • 2 weeks on job training (mandatory) • Induction training on overview of blast furnace operation • Tap hole preparation and maintenance • Trough, iron runner and slag runner preparation • Mud gun, tap hole drilling machine • Cast house crane functioning • 5S and safety practices
Training Duration:	
Theory (Hours)	96 Hrs
Practical (Hours)	204 Hrs
Total Duration	300 Hrs
Experience	<ul style="list-style-type: none"> • 1-2 years' experience in the similar function • In lieu of minimum qualification the incumbent should have minimum 1 to 3 years' experience as as assistant to Senior Cast House operator
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> 1. ISC/N0422: Understand the assigned job of cast house preparation 2. ISC/N0423: Understand the preparation job of cast house and equipment before the cast 3. ISC/N0008: Use basic health and safety practices at the workplace 4. ISC/N0009: Work effectively with others

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Cast House Senior Operator (ISC/Q0407)

Occupation	Iron Making
Sub-sector	Steel
Role Description	The job is all about to operate cast house equipment e.g. cast house crane, mud-gun, tap hole drill machine, trough heating, preparation of mud-gun clay and necessary preparation for maintaining the cast schedule.
NSQF Level	4
Minimum Educational Qualifications	Class X pass
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> • Reading, writing and interpretation of log book report • 2 weeks on job training for cast house equipment (mandatory) • Induction training of Cast House operation • Trough hitting practice preparation of mud gun clay and tap hole drill machine (including opening and closing) and safety practices • Cast house crane functioning • 5S and safety practices
Training Duration:	
Theory (Hours)	126 Hrs
Practical (Hours)	284 Hrs
Total Duration	410 Hrs
Experience	<ul style="list-style-type: none"> • 1-2 years of experience in similar function • In lieu of minimum qualification the incumbent should have minimum 4 to 5 years' experience as as assistant to furnace foreman
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> 1. ISC/N0424: Understand the assigned job for cast house preparation and operation 2. ISC/N0425: Understand the operational practice of blast furnace stoves 3. ISC/N0426: Understand the operational practice of stock house 4. ISC/N0008: Use basic health and safety practices at the workplace 5. ISC/N0009: Work effectively with others

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

House Keeping with Mechanised Equipments (ISC/Q0407)

Occupation	Iron Making
Sub-sector	Steel
Role Description	This job is all about regular House Keeping, maintaining the cleanliness of different areas like control rooms, offices, blast furnace proper including cast house, stock house (charging side) rail tracks of hot metal (H.M.) side/slag side for proper movement of rolling stock to maintain casting schedule.
NSQF Level	2
Minimum Educational Qualifications	Class 8th Pass, Driving license mandatory
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> • Reading and writing report • 2 weeks on job training (mandatory) • Various type of mechanised equipments and its operation • Technical and gallery training on operation of mechanised equipments • 5S and safety practices
Training Duration:	Theory (Hours) 98 Hrs Practical (Hours) 202 Hrs Total Duration 300 Hrs
Experience	<ul style="list-style-type: none"> • 1-2 years' experience as helper in the similar function and ability to drive light/heavy vehicles • In lieu of minimum qualification the incumbent should have minimum 4 to 5 years' experience as as helper to Supervisor and work experience of driving light/heavy vehicles
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> 1. ISC/N0427: Understand the assigned job of housekeeping with mechanised equipment 2. ISC/N0428: Prepare for operation of housekeeping with mechanised equipment 3. ISC/N0429: Carry out the assigned job of housekeeping with mechanised equipment 4. ISC/N0008: Use basic health and safety practices at the workplace 5. ISC/N0009: Work effectively with others

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Control Room Operator (ISC/Q0409)

Occupation	Iron Making
Sub-sector	Steel
Role Description	This job is all about coordinating and monitoring the operation of various functions of steel plant (blast furnace, sinter plant, coke making, steel making, finishing etc.)) for steel making through control panels, computer terminals or other control systems, usually from a central control room.
NSQF Level	5
Minimum Educational Qualifications	ITI Pass/ Diploma in Engineering preferably
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> • Induction training on steel making process • Process-wise control parameters that need to be monitored • Basic computer operations • Operation of DCS/SKADA • 4-6 weeks on job training (mandatory) • Job specific safety training
Training Duration:	Theory (Hours) 140 Hrs Practical (Hours) 342 Hrs Total Duration 482 Hrs
Experience	<ul style="list-style-type: none"> • 1 year of minimum experience under an experienced supervisor and exposure to working in the control room • In lieu of minimum qualification the incumbent should not be considered for this role
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> 1. ISC/N0430: Control the processes by monitoring the parameters on computer screen 2. ISC/N0008: Use basic health and safety practices at workplace 3. ISC/N0096 : Work effectively with others and manage team members

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Iron & Steel – Utility Hand Plant Operations (ISC/Q0410)

Occupation	Iron Making						
Sub-sector	Steel						
Role Description	The role holder works as a helping hand to operator/fitter/welder/technicians/electrician/driver etc. for performing the job safely, smoothly and within given time frame. The job is all about carrying tools and tackles to job site as per requirement, assisting for smooth and safe operation/repair/maintenance of the equipment at site, cleaning the assembly/equipment before dismantling and providing necessary help during dismantling/ assembling. This also includes cleaning the work site after completion of the job and carrying back the tools and tackles to departments/stores.						
NSQF Level	1						
Minimum Educational Qualifications	Class 8th Pass preferably						
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> • Technical knowledge on various tools and tackles • Identifying various work sites • Reading and writing report • 2 weeks on job training (mandatory) • 5S and safety practices 						
Training Duration:	<table> <tr> <td>Theory (Hours)</td><td>70 Hrs</td></tr> <tr> <td>Practical (Hours)</td><td>170 Hrs</td></tr> <tr> <td>Total Duration</td><td>240 Hrs</td></tr> </table>	Theory (Hours)	70 Hrs	Practical (Hours)	170 Hrs	Total Duration	240 Hrs
Theory (Hours)	70 Hrs						
Practical (Hours)	170 Hrs						
Total Duration	240 Hrs						
Experience	<ul style="list-style-type: none"> • 0-2 years of experience as general labour/helpier • In lieu of minimum qualification the incumbent should have minimum 3 to 4 years' experience as trainee/general labour 						
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> 1. ISC/N0431: Receive tools and tackles from stores / department 2. ISC/N0432: Assist for smooth operation at site 3. ISC/N0433: Clean the equipments and work site 4. ISC/N0008: Use basic health and safety practices at the workplace 5. ISC/N0009: Work effectively with others 						

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Battery Operator (ISC/Q0201)

Occupation	Coke Making
Sub-sector	Steel
Role Description	The job holder is responsible for general cleaning, housekeeping, battery machine cleaning, preparatory cleaning, technological cleaning of gas carrying equipment, cleaning, sealing and regulation of all sealing surfaces. Operating pollution control equipment, preparing ovens before pushing/charging and normalising after pushing/charging.
NSQF Level	5
Minimum Educational Qualifications	ITI Pass preferably
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> • Induction training for coke making process including oven preparation for charging and pushing • 6 months on job training (mandatory) • Need based package training for PLC, Hydraulics and computer orientation • Job specific safety training • Awareness programme for pollution control
Training Duration:	
Theory (Hours)	152 Hrs
Practical (Hours)	348 Hrs
Total Duration	500 Hrs
Experience	<ul style="list-style-type: none"> • In lieu of minimum qualification the incumbent should have passed / qualified QP of Control room operator/Process operator with 10th pass
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> 1. ISC/N0201: Carry out all enabling jobs pertaining to coke production 2. ISC/N0202: Prepare and carry out charging operation 3. ISC/N0203: Prepare and carry out pushing operation 4. ISC/N0008: Use basic health and safety practices at workplace 5. ISC/N0096: Work effectively with others and manage team members

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Battery Anchorage Regulator (ISC/Q0202)

Occupation	Coke Making
Sub-sector	Steel
Role Description	The job is all about inspection, monitoring, regulation and control of coke oven battery anchorage system, primarily comprising of fabricated buckstays with single piece flash plates, spring loaded cross tie rods at top and bottom, spring loaded longitudinal tie rods and necessary bracings in the regenerator zone.
NSQF Level	4
Minimum Educational Qualifications	ITI Pass preferably
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> • Induction training for coke making process including oven preparation for charging and pushing • 6 months on job training (mandatory) • Job specific safety training • Awareness programme for pollution control
Training Duration:	Theory (Hours) 140 Hrs Practical (Hours) 349 Hrs Total Duration 489 Hrs
Experience	<ul style="list-style-type: none"> • 1 to 2 years of minimum experience under an experienced and qualified Supervisor in the similar function • In lieu of minimum qualification the incumbent should have 5 - 6 years of experience as helper to supervisor of coke oven battery anchorage operation
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> 1. ISC/N0204: Understand the assigned job of anchorage measurement 2. ISC/N0205: Regulate the battery anchorage system after planning and coordination 3. ISC/N0206: Basic and routine maintenance/ trouble shooting of battery anchorage system 4. ISC/N0008: Use basic health and safety practices at workplace 5. ISC/N0009: Work effectively with others

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Heating Regulator (ISC/Q0203)

Occupation	Coke Making
Sub-sector	Steel
Role Description	The job is all about monitoring, controlling and maintaining all set values of various technological parameters attributed to "Technological Regime" of a coke oven battery.
NSQF Level	4
Minimum Educational Qualifications	ITI Pass preferably
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> • Induction training for coke making process with relevance to heating control • Computerised coking process control system • 2 months on job training (mandatory) • Job specific safety training • Awareness programme for pollution control
Training Duration:	
Theory (Hours)	148 Hrs
Practical (Hours)	352 Hrs
Total Duration	500 Hrs
Experience	<ul style="list-style-type: none"> • In lieu of minimum qualification the incumbent should be Class 10th pass and qualified the QP Reversing System Maintenance (L2)
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> 1. ISC/N0207: Understand the assigned job of heating regulator 2. ISC/N0208: Understand measurement parameters of "Technological Regime" of a coke oven battery 3. ISC/N0008: Use basic health and safety practices at workplace 4. ISC/N0009: Work effectively with others

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Assistant Reversing System Maintenance (ISC/Q0204)

Occupation	Coke Making
Sub-sector	Steel
Role Description	The job is all about inspection, monitoring for uninterrupted operation of reversing system comprising of reversing winch (electro mechanical/hydraulic) and its auxiliaries e.g. rope, pulley, tie-rods, sprocket, chains, linkages for fuel, air/waste gas system to ensure controlled/ uniform heating of heating chambers. This also involves inspection of centralised lubrication system.
NSQF Level	2
Minimum Educational Qualifications	Class 10th Pass
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> • Induction training for coke making process with relevance to heating control • Working knowledge of computerised coking process control system • 3 months on job training (mandatory) • Job specific safety training • Awareness programme for pollution control
Training Duration:	Theory (Hours) 96 Hrs Practical (Hours) 204 Hrs Total Duration 300 Hrs
Experience	<ul style="list-style-type: none"> • 6 months to 1 year of minimum experience in the similar function under an experienced and qualified Supervisor • In lieu of minimum qualification the incumbent should have 4 - 5 years of experience as helper to supervisor
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> 1. ISC/N0209: Understand and carry out the assigned job of inspection/ monitoring of reversing winch system and its operation 2. ISC/N0008: Use basic health and safety practices at the workplace 3. ISC/N0009: Works effectively with others

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Iron & Steel - Control Room Operator for Agglomeration (ISC/Q0301)

Occupation	Agglomeration						
Sub-sector	Steel						
Role Description	Control room Operator is responsible to operate the plant from DCS to control different sub processes. This involves raw material receiving, preparation, mixing & nodulizing, charging of green mix on bed, ignition & sintering, crushing & cooling, sizing and final screening, storage & dispatch, sampling & testing for sintering operation. This also involves palletizing operations e.g. raw material storage and additive crushing, drying & grinding, green ball formation, ignition, pellet induration, sintering & product handling and sampling & testing.						
NSQF Level	5						
Minimum Educational Qualifications	Diploma (Metallurgical / Mechanical) Pass preferably						
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> • Knowledge on iron ore beneficiation and pelletization by professional organization like IMMT • Knowledge on Raw Materials and additives that are used • Basic concepts on DCS operation • Training on Statistical tools • Safety practices 						
Training Duration:	<table> <tr> <td>Theory (Hours)</td><td>118 Hrs</td></tr> <tr> <td>Practical (Hours)</td><td>370 Hrs</td></tr> <tr> <td>Total Duration</td><td>488 Hrs</td></tr> </table>	Theory (Hours)	118 Hrs	Practical (Hours)	370 Hrs	Total Duration	488 Hrs
Theory (Hours)	118 Hrs						
Practical (Hours)	370 Hrs						
Total Duration	488 Hrs						
Experience	<ul style="list-style-type: none"> • 2-3 year in 4 MTPA Pellet plant Control room operations • In lieu of minimum qualification the incumbent should have minimum 5 to 6 years' experience working under a supervisor in the similar operation 						
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> 1. ISC/N0301: Carry out control room operation 2. ISC/N0302: Problem identification & reporting 3. ISC/N0008: Use basic health and safety practices at workplace 4. ISC/N0096: Work effectively with others and manage team members 						

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Assistant Raw material Handling Operator (ISC/Q0101)

Occupation	Raw Material Handling
Sub-sector	Steel, Sponge Iron, Ferro Alloys, Re-Rollers, Refractory
Role Description	The job is all about handling raw materials for coke oven, blast furnace, steel melting shop, coal handling, sinter plant etc. for day to day operation of steel plant to achieve the desired production capacity.
NSQF Level	2
Minimum Educational Qualifications	Class 8th Pass
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> • Reading and writing report • 2 weeks on job training (mandatory) • Induction training on overview of coke oven, blast furnace, sinter plant, steel melting shop etc. including blending operation • Functioning of conveyor along with its components • 5S and safety practices
Training Duration:	Theory (Hours) 110 Hrs Practical (Hours) 290 Hrs Total Duration 400 Hrs
Experience	<ul style="list-style-type: none"> • 0-2 years as general labour/ helper in similar operation • In lieu of minimum qualification the incumbent should have minimum 4 to 5 years' experience as general labour/ helper in similar operation
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> 1. ISC/N0102: Understand the assigned job of raw material handling 2. ISC/N0103: Prepare for raw material handling operation 3. ISC/N0104: Carry out raw material handling operation 4. ISC/N0008: Use basic health and safety practices at the workplace 5. ISC/N0009: Work effectively with others

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Screen & Crusher Operator (ISC/Q0102)

Occupation	Raw Material Handling
Sub-sector	Steel, Sponge Iron, Ferro Alloys, Re-Rollers, Refractory
Role Description	The job is all about controlling continuous operation of various makes of crushers, ball mills, screens, grate bars, grizzly's etc. as applicable to obtain optimum size fractions of different raw materials charged into the blast furnace for iron making (Hot metal production).
NSQF Level	3
Minimum Educational Qualifications	Class 10th Pass preferably
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> • Induction training for material handling at steel plant • 6 months on job training (mandatory) • Job specific safety training • Awareness programme for pollution control
Training Duration:	
Theory (Hours)	112 Hrs
Practical (Hours)	278 Hrs
Total Duration	390 Hrs
Experience	<ul style="list-style-type: none"> • 0 to 1 year of experience in a similar function under an experienced and qualified Supervisor • In lieu of minimum qualification the incumbent should have 5 - 6 years of experience as helper to supervisor
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> 1. ISC/N0105: Carry out inspection and monitor the screening and crushing unit 2. ISC/N0106: Carry out operation of screening and crushing Unit 3. ISC/N0107: Carry out basic maintenance activities of screening and crushing unit 4. ISC/N0008: Use basic health and safety practices at workplace 5. ISC/N0009: Work effectively with others

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Conveyor and Other Bulk Material Handling Technician (ISC/Q0103)

Occupation	Raw Material Handling
Sub-sector	Steel, Sponge Iron, Ferro Alloys, Re-Rollers, Refractory
Role Description	The job is all about bulk material handling by conveyor for day to day operations. This job also involves maintaining the stock of all raw materials used in iron and steel industry in the bunker for uninterrupted operation.
NSQF Level	3
Minimum Educational Qualifications	Class 10th Pass
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> • Reading and writing report • 2 weeks on job training (mandatory) • Induction training on different conveying systems • Functioning of conveyor along with its components • Raw materials required for Steel Melting Shop • Specific material required per hour for maintaining the production schedule • 5S and safety practices
Training Duration:	
Theory (Hours)	120 Hrs
Practical (Hours)	280 Hrs
Total Duration	400 Hrs
Experience	<ul style="list-style-type: none"> • 0-2 years' experience in similar function • In lieu of minimum qualification the incumbent should have minimum 4 to 5 years' experience as helper to Technician in the similar operation
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> 1. ISC/N0101: Understand the assigned job of conveyor operation, bulk material handling process and different types of raw materials used in iron and steel industry 2. ISC/N0008: Use basic health and safety practices at the workplace 3. ISC/N0009: Work effectively with others

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Stacker / Reclaimer Operator (ISC/Q0104)

Occupation	Raw Material Handling						
Sub-sector	Steel, Sponge Iron, Ferro Alloys, Re-Rollers, Refractory						
Role Description	This job is all about the operation of stacker conveyor and Reclaimer for material handling agglomeration function.						
NSQF Level	3						
Minimum Educational Qualifications	ITI (Mechanical) pass preferably						
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> • Understanding the role of Stacker / Re-claimer • Knowledge of Conveyor System • 2 weeks on job training for belt operation (mandatory) • Functioning of all basic Mechanical, Electrical Equipments • Safety practices 						
Training Duration:	<table> <tr> <td>Theory (Hours)</td><td>106 Hrs</td></tr> <tr> <td>Practical (Hours)</td><td>284 Hrs</td></tr> <tr> <td>Total Duration</td><td>390 Hrs</td></tr> </table>	Theory (Hours)	106 Hrs	Practical (Hours)	284 Hrs	Total Duration	390 Hrs
Theory (Hours)	106 Hrs						
Practical (Hours)	284 Hrs						
Total Duration	390 Hrs						
Experience	<ul style="list-style-type: none"> • 0-2 years' experience in similar function • In lieu of minimum qualification the incumbent should have minimum 5 to 6 years' experience as helper to Supervisor in the similar operation 						
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> 1. ISC/N0108: Prepare for the stacker / re-claimer operation 2. ISC/N0109: Carry out stacker / re-claimer operation 3. ISC/N0008: Use of basic health and safety practices at workplace 4. ISC/N0009: Work effectively with others 						

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Refractory Bricks Layer (ISC/Q1201)

Occupation	Refractory Maintenance
Sub-sector	Steel
Role Description	The job involves laying the right quality of refractory bricks with the right mortar in the designated areas of a thermal installation in a steel plant, according to design specification.
NSQF Level	3
Minimum Educational Qualifications	Class 10th Pass preferably
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> • Practical / on-job training for minimum 6 months (mandatory) • 5S and safety practices
Training Duration:	
Theory (Hours)	86 Hrs
Practical (Hours)	224 Hrs
Total Duration	310 Hrs
Experience	<ul style="list-style-type: none"> • 0-2 years' experience in similar function • In lieu of minimum qualification the incumbent should have minimum 3 to 4 years' experience as general labour/ helper in the similar operation under an experienced bricklayer/ supervisor
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> 1. ISC/N1201: Understand the brick laying job 2. ISC/N1202: Arrange necessary tools, tackles and material for brick laying job 3. ISC/N1203: Lay refractory bricks according to design 4. ISC/N0008: Use basic health and safety practices at the workplace 5. ISC/N0009: Work effectively with others

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Supervisor-Refractory Brick Laying (ISC/Q1203)

Occupation	Refractory Maintenance
Sub-sector	Steel
Role Description	The job involves planning, supervision and guiding the brick laying activities in steel plant furnaces.
NSQF Level	5
Minimum Educational Qualifications	B.Sc /Diploma Pass preferably
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> On job training for 6 months (mandatory) Theoretical and practical training on Refractory Brick Laying processes and practices 5S and safety practices
Training Duration:	
Theory (Hours)	112 Hrs
Practical (Hours)	278 Hrs
Total Duration	390 Hrs
Experience	<ul style="list-style-type: none"> 0-2 years of experience in similar function In lieu of minimum qualification the incumbent should have minimum 3 to 4 years' experience in the similar operation under an experienced supervisor
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> ISC/N1205: Understand the job & plans for execution ISC/N1206: Allocate job, fixes target & provides support to team members ISC/N1207: Supervise the job & review progress periodically ISC/N0008: Use basic health and safety practices at workplace ISC/N0096: Work effectively with others and manage team members

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Shift In Charge Furnace: Ferro Alloys (ISC/Q5301)

Occupation	Furnace Operations
Sub-sector	Ferro Alloys
Role Description	Shift In Charge is responsible to a particular shift for the entire operation involved in the production processes and maintenance.
NSQF Level	5
Minimum Educational Qualifications	Diploma (Metallurgical / Mechanical / Electrical) Pass preferably
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> Theoretical concepts on melting, reduction and oxidation process involved in arc furnace operations Awareness on the equipment involved both in Electrical & Mechanical areas
Training Duration:	<p>Theory (Hours) 133 Hrs</p> <p>Practical (Hours) 277 Hrs</p> <p>Total Duration 410 Hrs</p>
Experience	<ul style="list-style-type: none"> 2 years' experience in similar function under an experienced shift in charge In lieu of minimum qualification the incumbent should have 6 to 7 years working experience under an experienced Shift In Charge
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> ISC/N5301: Carry out shift operation ISC/N5302: Carry out reporting and documentation ISC/N5303: Carry out quality checks ISC/N5304: Carry out problem identification and escalation ISC/N0008: Use basic health and safety practices at the workplace ISC/N0096: Work effectively with others and manage team members

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Stoking Car Operator: Ferro Alloys (ISC/Q5302)

Occupation	Furnace Operations
Sub-sector	Ferro Alloys
Role Description	The role holder inspects that the stoking car is in proper working condition, runs/drives on the shop floor for stoking the charge and to release the gases between the electrodes without touching the electrodes. The role holder is responsible to cover the arc properly and distribute the charge uniformly. The role holder is also responsible for carrying out basic maintenance of the stoking car.
NSQF Level	3
Minimum Educational Qualifications	Class X pass preferably, Valid Driving License (mandatory)
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> • Importance of covering the furnace with Charge mix • Equipment which are carrying currents and precautions while operating the car • Must have valid driving license • 5S and safety practices • Hazards associated with working at heights, confined spaces & high temperatures
Training Duration:	
Theory (Hours)	102 Hrs
Practical (Hours)	278 Hrs
Total Duration	380 Hrs
Experience	<ul style="list-style-type: none"> • 0 to 1 year experience in similar function • In lieu of minimum qualification the incumbent should have minimum 4 to 5 years working experience in driving medium/heavy vehicle
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> 1. IISC/N5305: Prepare the stoking car 2. ISC/N5306: Perform operations with the stoking car 3. ISC/N5307: Perform basic maintenance and troubleshooting of the stoking car 4. ISC/N0008: Use basic health and safety practices at the workplace 5. ISC/N0009: Work effectively with others

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Furnace Operator: Ferro Alloys (ISC/Q5303)

Occupation	Furnace Operations
Sub-sector	Ferro Alloys
Role Description	This job is all about understanding and operating all Control parameters related to Furnace Control Desk and Gas Cleaning plant Control Desk. This also involves Raw material feeding system operation.
NSQF Level	4
Minimum Educational Qualifications	ITI (Electrical) / B.Sc pass
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> • Basic concepts on all electrical formulas, relating to power factor / load factor / Current densities / balancing currents etc. • Basic knowledge on processes related to Ferro Alloys • Knowledge on Raw materials that are used • Basic knowledge of PLC systems
Training Duration:	Theory (Hours) 180 Hrs Practical (Hours) 320 Hrs Total Duration 500 Hrs
Experience	<ul style="list-style-type: none"> • 0-1 year experience in control room operation • In lieu of minimum qualification the incumbent should have minimum 3 to 4 years relevant experience in the similar field/function under an experienced supervisor as assistant to Furnace Operator
Applicable National Occupational Standards (NOS)	1. ISC/N5308: Carry out control room & control desk operation 2. ISC/N0008: Use basic health and safety practices at the workplace 3. ISC/N0009: Work effectively with others

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Pipe Line Fitter & Maintenance (ISC/Q0813)

Occupation	Fitter
Sub-sector	Mechanical Maintenance
Role Description	The job holder maintains pipe lines across steam line, water line, gas line etc. across the plant. This job holder is also responsible for up keeping, monitoring and maintenance of pipe lines, fabricate pipe lines as per requirement, laying out pipe line during maintenance operations.
NSQF Level	3
Minimum Educational Qualifications	10th Pass, preferably
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> • 2 weeks hands on training (mandatory) • Reading and interpreting drawings • Machining, welding, gas cutting, assembling • Working knowledge of tools & fixtures • Use & working mechanisms of measuring instruments • 5S and safety practices • Working at heights, confined spaces & high temperatures
Training Duration:	
Theory (Hours)	120 Hrs
Practical (Hours)	280 Hrs
Total Duration	400 Hrs
Experience	<ul style="list-style-type: none"> • 0-2 years' experience in similar function • In lieu of minimum qualification the incumbent should have minimum 3 to 5 years relevant experience in the similar field/ function under an experienced supervisor as utility hand/ helper
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> 1. ISC/N0820: Understand the assigned pipe line job 2. ISC/N0821: Prepare for assigned pipe line job operation 3. ISC/N0822: Carry out the assigned pipe line operation 4. ISC/N0023: Activities specific to pipe line operation 5. ISC/N0008: Use basic health and safety practices at the workplace 6. ISC/N0009: Work effectively with others

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Fitter- Heating Insulation (ISC/Q0819)

Occupation	Fitter
Sub-sector	Mechanical Maintenance
Role Description	The job is all about insulation of pipe line, gas line, steam line, vessels, scrubbers, valves, blower etc. This also involves inspection and maintenance of pipe line, gas line, steam line, vessels, scrubbers, valves, blower etc. by isolating the unit through valves, water seals, leaker seals, etc. to rectify leakage, thermal heat loss and corrosion. The job also involves cleaning the parts, dismantling the pipeline (if required), rectifying the root causes, reinsulating the pipe line as required, checking insulation for fitness and ensuring to charge the line.
NSQF Level	3
Minimum Educational Qualifications	10th Pass, preferably
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> • Reading and interpreting pipe line circuit drawings • Welding, gas cutting and pipe line assembling • Working knowledge of tools & tackles • Various insulation material and their usage • 5S and safety practices • Working at heights, confined spaces & high temperatures • 2 weeks hands on job training (mandatory)
Training Duration:	
Theory (Hours)	120 Hrs
Practical (Hours)	280 Hrs
Total Duration	400 Hrs
Experience	<ul style="list-style-type: none"> • 0-1 year experience in similar function • In lieu of minimum qualification the incumbent should have minimum 4 to 5 years' experience as as helper to insulation fitter
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> 1. ISC/N0817: Understand the assigned job of fitter insulation 2. ISC/N0818: Prepare for operation of insulation job 3. ISC/N0819: Carry out the assigned operation for insulation 4. ISC/N0008: Use basic health and safety practices at workplace 5. ISC/N0009: Work effectively with others

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Fitter Maintenance: Ferro Alloys (ISC/Q0819)

Occupation	Fitter
Sub-sector	Ferro Alloys
Role Description	The job holder is to carry out periodical maintenance related to all furnace parts, water cooling system and hydraulic power packs of the furnace. This includes maintenance of feeding systems like conveyors, feeders etc.
NSQF Level	3
Minimum Educational Qualifications	ITI / 10th Pass preferably
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> • Reading and interpreting engineering/equipment drawings • Machining, welding, gas cutting, assembling • Working knowledge of tools & fixtures and hydraulic power packs • 5S and safety practices • Working at heights, confined spaces & high temperatures
Training Duration:	
Theory (Hours)	100 Hrs
Practical (Hours)	260 Hrs
Total Duration	360 Hrs
Experience	<ul style="list-style-type: none"> • 1-2 years' experience in similar function • In lieu of minimum qualification the incumbent should have minimum 5 to 6 years working experience in the similar field/function under as experienced supervisor as helper/utility hand
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> 1. ISC/N5501: Understand the assigned job of fitter maintenance 2. ISC/N5502: Prepare for maintenance operation 3. ISC/N5503: Carry out the maintenance operation 4. ISC/N5504: Activities specific to insulation function 5. ISC/N5505: Activities specific to functions of hydraulic systems 6. ISC/N5506: Activities specific to functions of water cooling systems 7. ISC/N0008: Use basic health and safety practices at the workplace 8. ISC/N0009: Work effectively with others

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Fitter & Maintenance Water Cooling (ISC/Q0820)

Occupation	Fitter
Sub-sector	Mechanical Maintenance
Role Description	The job holder identifies the problems in water cooling system in terms of source of leakage, pipe choking due to scale formation, corrosion, etc. and make alternative arrangements for cooling, rectifying the root causes, carrying out checks for fitness.
NSQF Level	3
Minimum Educational Qualifications	10th Pass
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> • Reading and interpreting water circuit drawings • Welding, gas cutting and pipe line assembling • Working knowledge of tools & tackles • 5S and safety practices • Working at heights, confined spaces & high temperatures • 2 weeks hands on job training (mandatory)
Training Duration:	
Theory (Hours)	134 Hrs
Practical (Hours)	326 Hrs
Total Duration	460 Hrs
Experience	<ul style="list-style-type: none"> • 2-3 years' experience in the similar function • In lieu of minimum qualification the incumbent should have minimum 4 to 5 years' experience as as helper to fitter - water cooling system
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> 1. ISC/N0814: Understand the assigned job of fitter water cooling system 2. ISC/N0815: Prepare for operation for water cooling system 3. ISC/N0816: Carry out the assigned sequence of operation for water cooling system 4. ISC/N0008: Use basic health and safety practices at the workplace 5. ISC/N0009: Work effectively with others

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

EOT Overhead Crane Operator (ISC/Q0901)

Occupation	Mechanical Maintenance
Sub-sector	Steel, Sponge iron, Ferro Alloys, Re-Rollers, Refractory
Role Description	Operating overhead cranes for safe transfer of raw material, intermediaries and finished products within the plant on receiving the signal.
NSQF Level	3
Minimum Educational Qualifications	10th / Science Graduate Pass preferably
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> Working knowledge of control system of cranes, mechanical structures, control system, gear box and pulleys Operating knowledge of overhead cabin, pendant & Remote control, different signalling signage system Minimum 30 hours of hands on experience on crane operation 5S and safety practices Working at heights, confined spaces & high temperatures
Training Duration:	
Theory (Hours)	66 Hrs
Practical (Hours)	206 Hrs
Total Duration	272 Hrs
Experience	<ul style="list-style-type: none"> 0-1 year with minimum 30 hours of hands on experience on crane operation In lieu of minimum qualification the incumbent should have 5-7 years of relevant work experience working under Crane Operator
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> ISC/N0913: Check the control systems of the crane ISC/N0914: Operate the crane to transfer material ISC/N0008: Use basic health and safety practices at the workplace ISC/N0009: Works effectively with others

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Conveyor Operation and Maintenance (ISC/Q0902)

Occupation	Mechanical Maintenance
Sub-sector	Steel, Sponge iron, Ferro Alloys, Re-Rollers, Refractory
Role Description	Inspection of the total belt driving system including the controls of conveyor belt as per the required sequence for feeding different raw materials (coal, lime stone, Iron ore etc.) in the service bunker through crushers/screener etc. This also involves basic maintenance and troubleshooting on Conveyor Belt system.
NSQF Level	3
Minimum Educational Qualifications	Class 10th pass preferably
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> • On job training for belt operation • Functioning of all basic Mechanical, Electrical Equipments • Maintenance techniques • Safety practices
Training Duration:	
Theory (Hours)	108 Hrs
Practical (Hours)	282 Hrs
Total Duration	390 Hrs
Experience	<ul style="list-style-type: none"> • 1-2 years' experience in similar function • In lieu of minimum qualification the candidate should have minimum 5-7 years of relevant experience in the similar field/function working under an experienced supervisor as assistant/helper
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> 1. ISC/N0915: Inspection of total conveyor system along with operating equipments 2. ISC/N0916: Start conveyor belt operation 3. ISC/N0917: Perform basic maintenance and troubleshooting on conveyor belt system 4. ISC/N0949: Carry out reporting and documentation 5. ISC/N0008: Use basic health and safety practices at the workplace 6. ISC/N0009: Work effectively with others

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Fitter : Hydraulic & Pneumatic System (ISC/Q0903)

Occupation	Mechanical Maintenance
Sub-sector	Steel, Sponge iron, Ferro Alloys, Re-Rollers, Refractory
Role Description	The job holder is responsible for regular upkeep of hydraulic and pneumatic equipment, checking of hydraulic medium (hydraulic mineral oil), air under pressure and rectifying breakdowns including; identifying problems, trouble shooting, dismantling equipment, cleaning parts, rectifying root causes, re assembling equipment, checking alignment, vibration, etc. to ensure fitness of equipment prior to handover and informing supervisor, operations, stores etc. as appropriate in a hydraulic and pneumatic system.
NSQF Level	4
Minimum Educational Qualifications	ITI Pass preferably
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> • Reading and interpreting hydraulic circuit drawings • Trouble shooting in hydraulic circuit • Assembly of hydraulic components • Working of different hydraulic components • Machining, welding, gas cutting, assembling • Working knowledge of tools & fixtures • Concept of contamination • Factors affecting the oil contamination • Effect of oil temperature, pressure, on hydraulic performance • Hydraulic valves, seals, piston rings etc. • General awareness on motor pump vibration • Hazards of pressure (oil/air) • 2 weeks hands on training (mandatory) • 5S and safety practices • Working at heights, confined spaces & high temperatures
Training Duration:	
Theory (Hours)	118 Hrs
Practical (Hours)	272 Hrs
Total Duration	390 Hrs
Experience	<ul style="list-style-type: none"> • 1-2 years of experience in similar function • In lieu of minimum qualification the incumbent should have 7-10 years of relevant work experience under an experienced supervisor
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> 1. ISC/N0918: Understand the assigned job of hydraulic and pneumatic equipments 2. ISC/N0919: Prepare for operation of hydraulic and pneumatic equipments 3. ISC/N0920: Carry out the assigned operation of hydraulic and pneumatic equipments 4. ISC/N0921: Activities specific to hydraulic & pneumatic fitter 5. ISC/N0008: Use basic health and safety practices at the workplace 6. ISC/N0009: Works effectively with others

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Belt Conveyor Maintenance (ISC/Q0904)

Occupation	Mechanical Maintenance
Sub-sector	Steel, Sponge iron, Ferro Alloys, Re-Rollers, Refractory
Role Description	The job holder is responsible for maintenance for the conveyor system including belts, idlers, motors, interlocking of belts, bunkers and control systems.
NSQF Level	3
Minimum Educational Qualifications	10th Pass preferably
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> • 2 weeks hands on training (mandatory) • Machining, welding, gas cutting, assembling • Working knowledge of tools & fixtures • 5S and safety practices • Working at heights, confined spaces & high temperatures
Training Duration:	
Theory (Hours)	110 Hrs
Practical (Hours)	280 Hrs
Total Duration	390 Hrs
Experience	<ul style="list-style-type: none"> • 0-2 years' experience in similar function • In lieu of minimum qualification the candidate should have 7-8 years of relevant work experience under an experienced supervisor
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> 1. ISC/N0922: Understands the assigned job of belt conveyor maintenance 2. ISC/N0923: Prepares for belt conveyor maintenance operation 3. ISC/N0924: Carries out the assigned job of belt conveyor maintenance operation 4. ISC/N0925: Activities specific to belt conveyor maintenance 5. ISC/N0008: Use basic health and safety practices at the workplace 6. ISC/N0009: Works effectively with others

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Fitter : Levelling, Alignment & Balancing (ISC/Q0905)

Occupation	Mechanical Maintenance
Sub-sector	Steel, Sponge iron, Ferro Alloys, Re-Rollers, Refractory
Role Description	The job holder is responsible for alignment of moving parts (e.g. pumps, blowing fans, etc.), checking the vibration of moving parts (blower fan, pumps, motor gearbox etc.) & balancing of equipment shafts (input and output).
NSQF Level	3
Minimum Educational Qualifications	10th Pass preferably
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> • 2 weeks hands on training (mandatory) • Machining, welding, gas cutting, assembling • Working knowledge of tools & fixtures • 5S and safety practices • Working at heights, confined spaces & high temperatures
Training Duration:	Theory (Hours) 100 Hrs Practical (Hours) 230 Hrs Total Duration 330 Hrs
Experience	<ul style="list-style-type: none"> • 2-3 years' experience in similar function • In lieu of minimum qualification the incumbent should have minimum 5 to 7 years relevant experience in the similar field/function as utility hand/helper
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> 1. ISC/N0926: Understand the assigned job of levelling, balancing & alignment 2. ISC/N0927: Prepare for operation of levelling, balancing & alignment 3. ISC/N0928: Carry out the assigned operation of levelling, balancing & alignment 4. ISC/N0008: Use basic health and safety practices at the workplace 5. ISC/N0009: Works effectively with others

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Bearing Maintenance (ISC/Q0906)

Occupation	Mechanical Maintenance
Sub-sector	Steel, Sponge iron, Ferro Alloys, Re-Rollers, Refractory
Role Description	The job holder inspects, identifies the problems in the equipment, rectifies the root causes for e.g. leakages, replaces the bearings, lubricates the bearings, ensures fitness of all types of bearings in the plant and carry out routine maintenance.
NSQF Level	3
Minimum Educational Qualifications	10th Pass preferably
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> • 2 weeks hands on training (mandatory) • Machining, welding, gas cutting, assembling • Working knowledge of tools & fixtures • 5S and safety practices • Working at heights, confined spaces & high temperatures
Training Duration:	<p>Theory (Hours) 80 Hrs</p> <p>Practical (Hours) 220 Hrs</p> <p>Total Duration 300 Hrs</p>
Experience	<ul style="list-style-type: none"> • 0-2 years' experience in similar function • In lieu of minimum qualification the incumbent should have minimum 6 to 7 years relevant experience in the similar field/function as utility hand/helper
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> 1. ISC/N0929: Understand the assigned job of bearing maintenance 2. ISC/N0930: Prepare for bearing maintenance operation 3. ISC/N0931: Carry out the assigned bearing maintenance operation 4. ISC/N0008: Use basic health and safety practices at the work place 5. ISC/N0009: Works effectively with others

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Mobile Equipment Maintenance (ISC/Q0907)

Occupation	Mechanical Maintenance
Sub-sector	Steel, Sponge iron, Ferro Alloys, Re-Rollers, Refractory
Role Description	The job holder carries out routine maintenance, identifies the problems, rectifies the root causes and ensures fitness of all moving equipment, for e.g. Mobile Cranes, Dumper, Forklift, etc.
NSQF Level	3
Minimum Educational Qualifications	10th Pass preferably
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> • 2 weeks hands on training (mandatory) • Machining, welding, gas cutting, assembling and greasing • Working knowledge of tools & fixtures • 5S and safety practices • Working at heights, confined spaces & high temperatures
Training Duration:	Theory (Hours) 113 Hrs Practical (Hours) 265 Hrs Total Duration 378 Hrs
Experience	<ul style="list-style-type: none"> • 0-2 years' experience in similar function • In lieu of minimum qualification the incumbent should have minimum 4 to 6 years relevant experience in the similar field/function as utility hand/helper
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> 1. ISC/N0932: Understand the assigned job of mobile equipment (light, medium, heavy and mobile crane) maintenance 2. ISC/N0933: Prepare for operation for mobile equipment (light, medium, heavy and mobile crane) maintenance 3. ISC/N0934: Carry out the assigned operation of mobile equipment (light, medium, heavy and mobile crane) maintenance 4. ISC/N0008: Use basic health and safety practices at the workplace 5. ISC/N0009: Works effectively with others

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Rigger: Rigging of Heavy Material (ISC/Q0908)

Occupation	Mechanical Maintenance
Sub-sector	Steel, Sponge iron, Ferro Alloys, Re-Rollers, Refractory
Role Description	The job holder is responsible for selection of tools and tackles, understanding and analysis of load distribution and lifting of loads safely as per needs of the group (Fitter, Welder, etc.).
NSQF Level	3
Minimum Educational Qualifications	Class 10th Pass preferably
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> Working knowledge of tools & fixtures (mandatory) Hands on rigging practice for 2 weeks (mandatory) 5S and safety practices (mandatory) Working at heights, confined spaces & high temperatures (mandatory)
Training Duration:	
Theory (Hours)	70 Hrs
Practical (Hours)	180 Hrs
Total Duration	250 Hrs
Experience	<ul style="list-style-type: none"> Class 10th pass with 4-6 years of experience, otherwise 2-3 years with ITI Pass In lieu of minimum qualification the incumbent should have minimum 6 to 7 years relevant experience in the similar field/function (e.g. Blast furnace construction/Relining etc.) as utility hand/helper
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> IISC/N0935: Understand the given job of rigging ISC/N0936: Carry out the required job of rigging ISC/N0008: Use basic health and safety practices at the work place ISC/N0009: Works effectively with others

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Iron & Steel - Machinist (ISC/Q0909)

Occupation	Mechanical Maintenance
Sub-sector	Steel, Sponge iron, Ferro Alloys, Re-Rollers, Refractory
Role Description	This role is about understanding engineering drawings and preparing the equipment for fabrication activities.
NSQF Level	3
Minimum Educational Qualifications	Class 12th Pass
Training (Suggested but not mandatory)	<p>Theoretical concepts, trainings on operation of machinery and the followings:</p> <ul style="list-style-type: none"> • Trades Safety: Getting Started and Working Safely with Chemicals • Linear and Distance Measurement • Introduction to Print Reading and knowledge in Tolerance and Symbols • Interpreting Geometric Dimensioning and Tolerancing • Bench Work and Quality Concepts: Tools and Applications
Training Duration:	<p>Theory (Hours) 120 Hrs Practical (Hours) 270 Hrs Total Duration 390 Hrs</p>
Experience	<ul style="list-style-type: none"> • 1-2 years' experience in similar function • In lieu of minimum qualification the incumbent should have minimum 3-4 years of relevant work experience working as semi- skilled Machinist/Trainee
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> 1. ISC/N0901: Understand design requirement and prepare equipment 2. ISC/N0902: Perform fabrication activities 3. ISC/N0903: Perform post - fabrication activities 4. ISC/N0904: Perform maintenance activities 5. ISC/N1004: Carry out housekeeping 6. ISC/N1005: Carry out reporting and documentation 7. ISC/N1006: Carry out quality checks 8. ISC/N1007: Carry out problem identification and escalation 9. ISC/N0008: Use basic health and safety practices at the workplace 10. ISC/N0009: Works effectively with others

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Iron & Steel - Plasma Cutter: Manual (ISC/Q0910)

Occupation	Mechanical Maintenance
Sub-sector	Steel, Sponge iron, Ferro Alloys, Re-Rollers, Refractory
Role Description	Perform manual cutting operations using plasma arc cutting process. The person would be able to independently carry out plasma arc cutting operations for as per welding procedure specification (WPS).
NSQF Level	4
Minimum Educational Qualifications	10th Standard Pass preferably
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> • Process Equipment & advantage • Mechanism of plasma jet formation and the design of plasma cutting torch • Importance of Shielding & Plasma gas • Plasma Arc cutting technique • Faulty technique and their effects
Training Duration:	<p>Theory (Hours) 68 Hrs</p> <p>Practical (Hours) 212 Hrs</p> <p>Total Duration 280 Hrs</p>
Experience	In lieu of minimum qualification the incumbent should have 4-5 years of relevant work experience
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> 1. ISC/N0909: Manually cut metal materials using plasma arc 2. ISC/N0910: Manually cut metal and metal alloys using oxy-fuel gases 3. ISC/N0008: Use basic health and safety practices at the workplace 4. ISC/N0009: Work effectively with others

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Gas Tungsten Arc Welding (GTAW) (ISC/Q0911)

Occupation	Mechanical Maintenance
Sub-sector	Steel, Sponge iron, Ferro Alloys, Re-Rollers, Refractory
Role Description	Perform manual operations for performing Tungsten Inert Arc Welding (GTAW) also known as Gas Tungsten Arc Welding (GTAW) and independently carry out TIG (GTAW) weld operations for welding joints in all positions as per Welding Procedure Specification.
NSQF Level	4
Minimum Educational Qualifications	Class 10th pass preferably
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> • Welding Processes/fitment and precisions along with classification & Coding of welding electrodes • Selection of Tungsten Rod composition, dia, gas requirement and purging • Basic Welding Metallurgy and Weldability of metals-Ferrous & Non-Ferrous • Weld Defects/distortion - their stress, control, cause & remedies • Welding Consumables and Control of welding parameters based on welding material
Training Duration:	
Theory (Hours)	80 Hrs
Practical (Hours)	300 Hrs
Total Duration	380 Hrs
Experience	<ul style="list-style-type: none"> • 1-2 years' experience in similar function • In lieu of minimum qualification the incumbent should have 4-5 years of relevant work experience
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> 1. ISC/N0911: Perform Tungsten Inert Gas (TIG) Welding also known as Gas Tungsten Arc Welding (GTAW) Welding 2. ISC/N0910: Manually cut metal and metal alloys using oxy-fuel gases 3. ISC/N0008: Use basic health and safety practices at the workplace 4. ISC/N0009: Work effectively with others

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Iron & Steel – Marker & Signage Painter (ISC/Q0913)

Occupation	Mechanical Maintenance
Sub-sector	Steel, Sponge iron, Ferro Alloys, Re-Rollers, Refractory
Role Description	The job involves writing slogans/messages/banners/flexes for display on the shop floor walls and open locations. This also involves painting designated surfaces in various shop floors of the steel plant.
NSQF Level	2
Minimum Educational Qualifications	Class 8th Pass (with English as a subject) preferably
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> Identifying various work sites Reading and writing 2 weeks on job training (mandatory) 5S and safety practices
Training Duration:	
Theory (Hours)	92 Hrs
Practical (Hours)	208 Hrs
Total Duration	300 Hrs
Experience	No past experience may be needed; but some exposure to similar jobs will be preferred
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> ISC/N0940: Study the text to be displayed and keeps ready the materials required for writing or, the surface to be painted ISC/N0941: Write the text to be displayed or, paints the designated surface with the appropriate material/paint ISC/N0008: Use basic health and safety practices at the workplace ISC/N0009: Work effectively with others

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Fitter Fabrication (ISC/CSC/Q0303)

Occupation	Fitting and Assembly
Sub-sector	Machine Tools, Dies, Moulds and Press Tools, Plastics Manufacturing Machinery, Textile Manufacturing Machinery, Process Plant Machinery, Electrical and Power Machinery, Light Engineering Goods
Role Description	Performs fitting operations on metal components using hand tools and manually operated machines, as per specifications.
NSQF Level	3
Minimum Educational Qualifications	10th Standard pass, preferably
Training (Suggested but not mandatory)	No Previous Training Required
Training Duration:	
Theory (Hours)	140 Hrs
Practical (Hours)	360 Hrs
Total Duration	500 Hrs
Experience	No Previous Experience Required
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> 1. CSC/N0303 Perform fitting operations on metal components using hand tools and manually operated machines 2. CSC/N0201 Perform simple manual cutting operations on carbon steels using oxy-fuel gas 3. CSC/N0202 Manually weld carbon steels in simple welding positions using Metal Arc Welding / Shielded Metal Arc Welding 4. CSC/N1335 Use basic health and safety practices at the workplace 5. CSC/N1336 Work effectively with others

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Metal Inert Gas/ Metal Active Gas/ Gas Metal Arc Welder (MIG/MAG/GMAW) (ISC/CSC/Q0209)

Occupation	Welding and Cutting
Sub-sector	<ul style="list-style-type: none"> • Machine Tools • Dies, Moulds and Press Tools • Plastics Manufacturing Machinery • Textile Manufacturing Machinery • Process Plant Machinery • Electrical and Power Machinery • Light Engineering Goods
Role Description	Perform manual (semi-automatic) operations for performing metal inert gas/metal active gas welding (MIG/MAG) also known as gas metal arc welding (GMAW) for welding joints in all positions as per welding procedure specification (WPS).
NSQF Level	4
Minimum Educational Qualifications	10th Standard pass, Preferably
Training (Suggested but not mandatory)	Manual/Shielded Metal Arc Welding
Training Duration:	
Theory (Hours)	155 Hrs
Practical (Hours)	445 Hrs
Total Duration	600 Hrs
Experience	3 months Manual/ Shielded Metal Arc Welding
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> 1. CSC/N0209: Manually (semi-automatic) welding joints using the MIG/MAG (GMAW) process 2. CSC/N0204: Manually weld carbon and low alloy steels in 1G/1F, 2G/2F and 3G/3F welding positions using Manual Metal Arc Welding/ Shielded Metal Arc Welding 3. CSC/N0203: Manually cut metal and metal alloys using oxyfuel gas 4. CSC/N0207: Manually cut metal materials using plasma arc 5. CSC/N1335: Use basic health and safety practices at the workplace 6. CSC/N1336: Work effectively with others

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Oxy Fuel Gas Cutter (ISC/CSC/Q0203)

Occupation	Welding and Cutting
Sub-sector	<ul style="list-style-type: none"> • Machine Tools • Dies, Moulds and Press Tools • Plastics Manufacturing Machinery • Textile Manufacturing Machinery • Process Plant Machinery • Electrical and Power Machinery • Light Engineering Goods
Role Description	Perform manual oxy-fuel cutting for a range of standard cutting job requirements using oxy-fuel gas. Cut different materials (cast mild steels, high tensile/special steels, other materials) in various profiles.
NSQF Level	3
Minimum Educational Qualifications	8th Standard pass, preferably
Training (Suggested but not mandatory)	No Previous Training Required
Training Duration:	Theory (Hours) Practical (Hours) Total Duration
Experience	No Previous Experience Required
Applicable National Occupational Standards (NOS)	1. CSC/N0203: Manually cut metal and metal alloys using oxy- fuel gases 2. CSC/N1335: Use basic health and safety practices at the workplace 3. CSC/N1336: Work effectively with others

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Flux Core Arc Welding Semi-Automatic (ISC/CSC/Q0205)

Occupation	Welding and Cutting
Sub-sector	<ul style="list-style-type: none"> • Machine Tools • Dies, Moulds and Press Tools • Plastics Manufacturing Machinery • Textile Manufacturing Machinery • Process Plant Machinery • Electrical and Power Machinery
Role Description	Perform operations for semiautomatic flux cored arc welding process for a range of standard welding job requirements as per welding procedure specification (WPS).
NSQF Level	4
Minimum Educational Qualifications	10th standard pass, preferably
Training (Suggested but not mandatory)	Manual/ Shielded Metal Arc Welding
Training Duration:	Theory (Hours) 198 Hrs Practical (Hours) 512 Hrs Total Duration 710 Hrs
Experience	No previous experience required
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> 1. CSC/N0205: Perform semi automatic flux cored arc welding process to prepare joints 2. CSC/N0204: Manually weld carbon and low alloy steels in 1G/1F, 2G/2F and 3G/3F welding positions using Manual Metal Arc Welding/ Shielded Metal Arc Welding 3. CSC/N0203: Manually cut metal and metal alloys using oxyfuel gas 4. CSC/N0207: Manually cut metal materials using plasma arc 5. CSC/N1335: Use basic health and safety practices at the workplace 6. CSC/N1336: Work effectively with others

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

MMAW/SMAW Welder (ISC/CSC/Q0204)

Occupation	Welding and Cutting
Sub-sector	<ul style="list-style-type: none"> • Machine Tools • Dies, Moulds and Press Tools • Plastics Manufacturing Machinery • Textile Manufacturing Machinery • Process Plant Machinery • Electrical and Power Machinery • Light Engineering Goods
Role Description	Perform manual metal arc welding (MMAW) also known as shielded metal arc welding (SMAW) for producing a fillet and groove joints on carbon and low alloy steels in a range of welding positions as per detailed instructions received.
NSQF Level	3
Minimum Educational Qualifications	8th Standard pass, preferably
Training (Suggested but not mandatory)	No Previous Training Required
Training Duration:	Theory (Hours) 150 Hrs Practical (Hours) 350 Hrs Total Duration 500 Hrs
Experience	No Previous Experience Required
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> 1. CSC/N0204: Manually weld carbon and low alloy steels in 1G/1F, 2G/2F and 3G/3F welding positions using Manual Metal Arc Welding/ Shielded Metal Arc Welding 2. CSC/N0201: Perform simple manual cutting operations on Carbon steels using oxy fuel gas 3. CSC/N1335: Use basic health and safety practices at the workplace 4. CSC/N1336: Work effectively with others

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Senior MMAW/SMAW Welder (ISC/CSC/Q0208)

Occupation	Welding and Cutting
Sub-sector	<ul style="list-style-type: none"> • Machine Tools • Dies, Moulds and Press Tools • Plastics Manufacturing Machinery • Textile Manufacturing Machinery • Process Plant Machinery • Electrical and Power Machinery • Light Engineering Goods
Role Description	Perform manual metal arc welding also known as shielded metal arc welding for producing a range of joints on various forms of materials (carbon steels, low alloy steel and stainless steel) as per welding specification procedures (WPS).
NSQF Level	4
Minimum Educational Qualifications	10th Standard pass, preferably
Training (Suggested but not mandatory)	No Previous Training Required
Training Duration:	Theory (Hours) Practical (Hours) Total Duration
Experience	No Previous Experience Required
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> 1. CSC/N0208: Manually weld carbon steel/ low alloy steel and austenitic stainless steel using Metal Arc Welding / Shielded Metal Arc Welding 2. CSC/N0207: Manually cut metal materials using plasma arc 3. CSC/N0203: Manually cut metal and metal alloys using oxyfuel gas 4. CSC/N1335: Use basic health and safety practices at the workplace 5. CSC/N1336: Work effectively with others

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Iron & Steel: Process Operator (ISC/Q0701)

Occupation	Cold & Hot Rolling Operations
Sub-sector	Steel, Re-Rollers
Role Description	This involves keeping the different process lines (viz. Pickling, Rolling, Annealing, Galvanising, Utilities etc.) functional by ensuring continuity of process. This includes providing the actual commands for different operations, as needed and monitors the operations for any deviations. This also involves inspection of the material between the workstations of the processes to ensure alignment to specifications.
NSQF Level	5
Minimum Educational Qualifications	ITI pass preferably
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> • Basics of metallurgy • Acid handling • Annealing • Galvanising • Basics of Hydraulics, Pneumatics and Electrical controls
Training Duration:	Theory (Hours) 127 Hrs Practical (Hours) 283 Hrs Total Duration 410 Hrs
Experience	<ul style="list-style-type: none"> • 0-1 year experience in similar function • In lieu of minimum qualification the incumbent should have 4-5 years of relevant work experience under an experienced Process Operator
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> 1. ISC/N0706: Prepare for operation of control systems 2. ISC/N0707: Perform operation of control systems 3. ISC/N0008: Use basic health and safety practices at the workplace 4. ISC/N0096: Work effectively with others and manage team members

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Coil Packaging Machine Operator: Rolling Mills (ISC/Q0702)

Occupation	Cold & Hot Rolling Operations
Sub-sector	Steel
Role Description	The job is all about operation of the Coil Master (Coil Packaging Machine) in order to pack the finished coils (CR, Galvanised, Tinned, Colour Coated etc.), Strapping operation and Wagon Unitisation in safe & secure manner. It includes bundling of the coil after mill, protecting the coil from dust, humidity, rain and handling damage by applying protective films and sheets in a designed sequence; weighing and labelling the packed coil according to specifications and finally ensuring readiness of coils for dispatch.
NSQF Level	3
Minimum Educational Qualifications	Class X pass preferably
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> Hands on training for minimum 3 months in the occupation is a must (mandatory) Concept of packaging and basic functioning of Coil Master Safety procedures and practices
Training Duration:	Theory (Hours) 90 Hrs Practical (Hours) 210 Hrs Total Duration 300 Hrs
Experience	<ul style="list-style-type: none"> No past experience may be needed In lieu of minimum qualification the candidate should have 2 years of relevant work experience under an experienced supervisor
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> ISC/N0704: Check specifications, weights and physical condition of the Coil ISC/N0705: Carry out coil master operation ISC/N0710: Carry out metal jacketing & strapping operation ISC/N0711: Ensure wagon unitisation ISC/N0008: Use basic health and safety practices at the workplace ISC/N0009: Work effectively with others

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Fluid Management Operator: Rolling Mills (ISC/Q0703)

Occupation	Cold & Hot Rolling Operations
Sub-sector	Steel, Re-Rollers
Role Description	The job is all about preparation, supply, collection, evaluation and operation of all fluids connected with rolling operation in steel plant. It involves ensuring the right quality & quantity of the fluid, its operation, inventory management, waste fluid disposal and the basic maintenance activities associated with maintaining the system.
NSQF Level	4
Minimum Educational Qualifications	Class XII (Science) Pass preferably
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> • Training in Analytical Chemistry techniques for the laboratory job of testing samples • Minimum 3 months on job training (mandatory) • General Safety practices and procedures • Hazards associated with handling various chemicals
Training Duration:	Theory (Hours) 118 Hrs Practical (Hours) 322 Hrs Total Duration 440 Hrs
Experience	<ul style="list-style-type: none"> • No past experience may be needed • In lieu of minimum qualification the candidate should have 2 years of relevant work experience under an experienced supervisor
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> 1. ISC/N0701: Carry out laboratory activities 2. ISC/N0702: Carry out fluid system maintenance & management 3. ISC/N0703: Carry out fluid inventory management including disposal of waste fluids from process 4. ISC/N0008: Use basic health and safety practices at the workplace 5. ISC/N0009: Work effectively with others

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Manual Packaging & Marking Operator (ISC/Q0704)

Occupation	Cold & Hot Rolling Operations
Sub-sector	Steel
Role Description	The job involves manually packing materials and marking necessary details on the pack.
NSQF Level	2
Minimum Educational Qualifications	Class 8th Pass preferably
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> • Reading and writing • 2 weeks on job training (mandatory) • 2S and safety practices
Training Duration:	<p>Theory (Hours) 66 Hrs</p> <p>Practical (Hours) 204 Hrs</p> <p>Total Duration 270 Hrs</p>
Experience	No past experience may be needed; but some exposure to similar jobs will be preferred
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> 1. ISC/N0708: Manually packing material and marking the identity of the material on the wrap 2. ISC/N0709: Safety loading the packed & marked material on to a vehicle 3. ISC/N0008: Use basic health and safety practices at the workplace 4. ISC/N0009: Work effectively with others

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Fitter Electrical Assembly (ISC/Q1001)

Occupation	Electrical Maintenance
Sub-sector	Steel, Sponge Iron, Ferro Alloys, Re-Rollers, Refractory
Role Description	Fitter is responsible for identifying the operations required to assemble various components of the machine and electrical panel by studying their engineering drawings, fitting different components of the machine to perform assigned task and testing the assembled machine
NSQF Level	3
Minimum Educational Qualifications	12th standard (Science) / ITI Pass preferably
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> • Theoretical concepts on machine handling and electrical panels • Trainings on operation of machinery and electrical panels
Training Duration:	<p>Theory (Hours) Practical (Hours) Total Duration</p> <p>75 Hrs 235 Hrs 310 Hrs</p>
Experience	In lieu of minimum qualification the incumbent should have minimum 24 months of relevant experience in the similar field/function under experienced supervisor as helper.
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> 1. ISC/N1001: Prepare for assembling operation 2. ISC/N1002: Assemble the electrical components 3. ISC/N1003: Perform post - assembly activities 4. ISC/N1004: Carry out housekeeping 5. ISC/N1005: Carry out reporting and documentation 6. ISC/N1006: Carry out quality checks 7. ISC/N1007: Carry out problem identification and escalation 8. ISC/N0008: Use basic health and safety practices at the workplace 9. ISC/N0009: Work effectively with others

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Fitter Electronic Assembly (ISC/Q1101)

Occupation	Electronics & Instrumentation Maintenance
Sub-sector	Steel, Sponge Iron, Ferro Alloys, Re-Rollers, Refractory
Role Description	Operations to assemble and wire up electronic panels/components and equipments and systems to mechanical equipment.
NSQF Level	3
Minimum Educational Qualifications	12th standard (Science) / ITI Pass preferably
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> Theoretical concepts on electronic panels and equipment handling Trainings on operation of electronic panels/components and equipment
Training Duration:	<p>Theory (Hours) 80 Hrs</p> <p>Practical (Hours) 220 Hrs</p> <p>Total Duration 300 Hrs</p>
Experience	In lieu of minimum qualification the incumbent should have minimum 12 months of relevant experience in the similar field/function.
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> ISC/N1101: Assemble and wire up electronic equipment and systems to mechanical equipment ISC/N0008: Use basic health and safety practices at the workplace ISC/N0009: Work effectively with others

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Fitter Instrumentation (ISC/Q1102)

Occupation	Electronics & Instrumentation Maintenance
Sub-sector	Steel, Sponge Iron, Ferro Alloys, Re-Rollers, Refractory
Role Description	This job is all about installing, dismantling, removing, replacing a range of components down to subassembly level right from pick-up unit / point of measurement and linking either directly to the instrument or to the instrument panel. This also involves making suitable slot on panel and fixing instrument and its associated parts under supervision of Technician Instrumentation.
NSQF Level	3
Minimum Educational Qualifications	10th standard (Science) Pass
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> • Hand/power Tools & metallurgy to understand strength of fixing and fixed devices • Component Drawings / Documents and Instrumentation • Mechanical detectors, Inductive detectors, Optical detectors, Transducers, Transmitters, Control Valves, Actuators, Thermocouples and similar measuring devices • Layout and Installation of Tubing and Piping Systems and joint boxes for troubleshooting • Latest techniques of punching holes in panels without causing denting and disturbing other adjacent instruments
Training Duration:	Theory (Hours) 70 Hrs Practical (Hours) 230 Hrs Total Duration 300 Hrs
Experience	In lieu of minimum qualification the incumbent should have minimum 24 months of relevant working experience in the similar field / function
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> 1. ISC/N1102: Carry out maintenance activities under the guidance and supervision of Technician Instrumentation 2. ISC/N1103: Periodically check measuring equipment for operation and ensure proper calibration 3. ISC/N0008: Use basic health and safety practices at the workplace 4. ISC/N0009: Works effectively with others

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Technician Furnace Transformer: Ferro Alloys (ISC/Q5601)

Occupation	Electrical Maintenance						
Sub-sector	Ferro Alloys						
Role Description	The job involves for maintenance of furnace transformers involved in Ferro Alloy operations. This includes main receiving sub-station and furnace transformer (both HT and LT).						
NSQF Level	4						
Minimum Educational Qualifications	ITI (Electrical / Electronics) pass preferably						
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> Transformer types and application for the purpose Knowledge of High & Low Voltage Functional knowledge of Tap Changer and its importance Working knowledge of tools & fixtures Importance of oil cooling pumps & transformer functioning w.r.t oil & winding temp 5S and safety practices Hazards associated with working at heights, confined spaces & high temperatures 						
Training Duration:	<table> <tr> <td>Theory (Hours)</td><td>136 Hrs</td></tr> <tr> <td>Practical (Hours)</td><td>294 Hrs</td></tr> <tr> <td>Total Duration</td><td>430 Hrs</td></tr> </table>	Theory (Hours)	136 Hrs	Practical (Hours)	294 Hrs	Total Duration	430 Hrs
Theory (Hours)	136 Hrs						
Practical (Hours)	294 Hrs						
Total Duration	430 Hrs						
Experience	<ul style="list-style-type: none"> 0 to 1 year experience in similar function In lieu of minimum qualification the incumbent should have minimum 4 to 5 years working experience under qualified Engineer / Technician 						
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> ISC/N5601: Understand the job requirement of technician furnace transformer ISC/N5602: Prepares for furnace transformer operation ISC/N5603: Carries out the furnace transformer operation ISC/N5604: Activities specific to furnace transformer maintenance ISC/N0008: Use basic health and safety practices at the workplace ISC/N0009: Work effectively with others 						

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Laboratory Technician Physical (ISC/Q0801)

Occupation	Product Quality Control
Sub-sector	Steel
Role Description	The job is about preparation of steel samples, testing them for different physical properties against national/international standards, appropriately recording them and reporting them to the concerned department of the steel plant in order to ensure consistent product quality.
NSQF Level	3
Minimum Educational Qualifications	B.Sc (with Physics as a subject) Pass / Dip.in Engineering (Mechanical/Electrical) Pass preferably
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> • Hands on training in the physical testing laboratory for 3 months consisting of 1month theory +2 months practical • Technical implications of the tests and their impact on product/process • Basic computer operations • Job specific safety training (to be included in the Hands On training of 3 months)
Training Duration:	Theory (Hours) 120 Hrs Practical (Hours) 280 Hrs Total Duration 400 Hrs
Experience	<ul style="list-style-type: none"> • 6 -12 months -experience under an experienced laboratory technician • If the candidate has 6-12 months of hands on experience, the minimum qualification can be waived at the discretion of the employer
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> 1. ISC/N0803: Prepare the test sample, conduct physical tests and upload the results in logbook/system 2. ISC/N0804: Preserve and/or dispose-off the samples after physical test and calibrate the equipment at scheduled frequency 3. ISC/N0008: Use basic health and safety practices at workplace 4. ISC/N0009: Work effectively with others

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Manager Supplier Quality (ISC/ASC/Q6302)

Occupation	Quality Assurance
Sub-sector	Manufacturing Support
Role Description	managing and maintaining the quality of the vendors' processes and incoming materials as per the quality standards
NSQF Level	6
Minimum Educational Qualifications	B. Tech/Diploma in Mechanical/Electrical/Electronics Engineering
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> • Compulsory: Quality Management Systems like Ts16949, Lean Six Sigma; 7 QC tools, Supplier quality metrics, APQP, Continuous improvement systems, Supplier performance measurement systems, Lean systems, Data analysis tools like 8Ds etc., Root cause analysis methods like Fishbone/Cause and effect diagram etc. • Voluntary: Information flow systems like ERP/SAP , risk management, supplier contract management
Training Duration:	Theory (Hours) 200 Hrs Practical (Hours) 350 Hrs Total Duration 550 Hrs
Experience	<ul style="list-style-type: none"> • ASDC Level 5 or minimum 6-8 years in Quality/ Manufacturing/SQA department
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> 1. ASC/N6302: Monitor the quality of incoming materials 2. ASC/N6303: Inspect and qualify existing and new suppliers 3. ASC/N6304: Collaborate with suppliers for cost reduction and process improvement 4. ASC/N6305: Evaluate and manage performance of suppliers 5. ASC/N0002: Work effectively in a team 6. ASC/N0006: Maintain a safe, clean and secure working environment 7. ASC/ N0022: Ensure implementation of 5S activities at the shop floor & the office area

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Foundry Assistant/Casting Assistant (ISC/ASC/Q3201)

Occupation	Casting
Sub-sector	Manufacturing
Role Description	Responsible for cleaning the slag, supporting the Operator in various types of pre & post casting operations, storing output at designated place & process documentation
NSQF Level	2
Minimum Educational Qualifications	Class 8
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> • Basic casting and housekeeping skills • 5S and Safety
Training Duration:	
Theory (Hours)	100 Hrs
Practical (Hours)	150 Hrs
Total Duration	250 Hrs
Experience	0-2 years
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> 1. ASC/N 0021: Maintain 5S at the work premises 2. ASC/N 3201: Support in cleaning the slag from the furnace 3. ASC/N 3202: Clean and lubricating the dies ASC/N 3203: Support the operator in casting related operations 4. ASC/N 3204: Store the finished goods in the designated area 5. ASC/N 0006: Maintain a safe and healthy working environment

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Casting Technician - Sand Moulding (ISC/ASC/Q3205)

Occupation	Sand Casting
Sub-sector	Manufacturing
Role Description	Responsible for carrying out various types of pre & post sand casting operations & process documentation
NSQF Level	4
Minimum Educational Qualifications	ITI
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> • Latest Sand Mould preparation technology and sand casting techniques & methodologies • Reading and writing skills • Safety and 5S • Quality Management
Training Duration:	<p>Theory (Hours) 150 Hrs</p> <p>Practical (Hours) 250 Hrs</p> <p>Total Duration 400 Hrs</p>
Experience	2-3 years of experience in Sand Casting
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> 1. ASC/N3214: Understand and interpret engineering drawings and sketches related to casting 2. ASC/N3215: Understand Casting and sand moulding processes and equipment requirement to complete the task 3. ASC/N3216: Prepare the machine (apparatus) and auxiliaries 4. ASC/N3217: Perform the sand making related operations and monitor process parameters 5. ASC/N3218: Perform the core making related operations and monitor process parameters 6. ASC/N3219: Perform the mould making related operations and monitor process parameters 7. ASC/N3220: Perform the sand casting related operations and monitor process parameters 8. ASC/ N3221: Conduct quality checks and inspection of the finished sand cast products 9. ASC/N 0021: Maintain 5S at the work premises 10. ASC/N 0006: Maintain a safe and healthy working environment

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Casting Line In-Charge (ISC/ASC/Q3207)

Occupation	Casting
Sub-sector	Manufacturing
Role Description	The role is responsible for supervising various types of pre and post sand casting operations, overseeing accurate process documentation of the same and ensuring production targets are met
NSQF Level	6
Minimum Educational Qualifications	Diploma in Production/Foundry Engineering
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> • Latest casting techniques available in the market • Working of presses and dies • 5S and Safety aspects • Problem Solving Techniques • Quality Management Systems • Team Management skills • IT and ERP awareness
Training Duration:	Theory (Hours) 200 Hrs Practical (Hours) 350 Hrs Total Duration 550 Hrs
Experience	Casting line experience: 10- 12 years (ITI Background) and 2-3 year (diploma background)
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> 1. ASC/N3223: Manage end to end process related to metal casting process 2. ASC/N0016: Understand process requirements, ensure implementation and suggest process improvements 3. ASC/N0017: Manage and analyze production related operations of the shift/ line on a day to day basis 4. ASC/N0018: Finalize and manage the team on the line/ shift on a day to day basis 5. ASC/N0006B: Maintain a safe and healthy working environment 6. ASC/N00022: Ensure implementation of 5S activities at the shop floor and the office area

CATALOGUE OF QUALIFICATION PACKS (QPs)

JOB ROLE OVERVIEW

Heat Treatment Technician/Furnace Operator(ISC/ASC/Q3901)

Occupation	Heat Treatment
Sub-sector	Manufacturing
Role Description	Responsible for heat treatment of the work pieces like gears, shafts, transmission rods etc. using various processes like carburising, nitriding, annealing, tempering, induction hardening and quenching
NSQF Level	4
Minimum Educational Qualifications	Class 12 (Chemistry stream)
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> • Different types of heat treatment processes • Reading and writing skills • 5S & Safety • ERP systems within the organization
Training Duration:	<p>Theory (Hours) Practical (Hours) Total Duration</p> <p>150 Hrs 250 Hrs 400 Hrs</p>
Experience	2-3 years
Applicable National Occupational Standards (NOS)	<ol style="list-style-type: none"> 1. ASC/N3901: Understand job requirements and related processes 2. ASC/N3902: Operate different furnaces and conduct the heat treatment process 3. ASC/N3903: Conduct post heat treatment processes like Quenching, Washing and Shot Blasting 4. ASC/N3904: Conduct induction hardening process for small machine components 5. ASC/N0008: Conduct regular cleaning and maintenance of the equipment 6. ASC/N0006: Maintain a safe and healthy working environment 7. ASC/N0021: Maintaining 5S at the work premises

CATALOGUE OF QUALIFICATION PACKS (QPs)



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