



Qualification Pack



Fitter Electrical Assembly

QP Code: ISC/Q1001

NSQF Level: 3

Indian Iron & Steel Sector Skill Council || Indian Iron & Steel Sector Skill Council, KARIGORI BHAVAN, Plot no.B-7, Action Area-III, 5th Floor, Room no.509, Near Hazra Kalibari, Opposite Uni World City New Town, Kolkata, West Bengal Pin-700156.



Qualification Pack

Contents

ISC/Q1001: Fitter Electrical Assembly	3
<i>Brief Job Description</i>	3
Applicable National Occupational Standards (NOS)	3
<i>Compulsory NOS</i>	3
<i>Qualification Pack (QP) Parameters</i>	3
ISC/N0008: Use basic health and safety practices at the workplace	5
ISC/N0009: Work effectively with others	15
ISC/N1001: Prepare for assembling operation	20
ISC/N1002: Assemble the electrical components	28
ISC/N1003: Perform post - assembly activities	34
ISC/N1004: Carry out housekeeping	40
ISC/N1005: Carry out reporting and documentation	46
ISC/N1006: Carry out quality checks	51
ISC/N1007: Carry out problem identification and escalation	57
Assessment Guidelines and Weightage	63
<i>Assessment Guidelines</i>	63
<i>Assessment Weightage</i>	63
Acronyms	65
Glossary	66



Qualification Pack

ISC/Q1001: Fitter Electrical Assembly

Brief Job Description

This job is all about identifying the operations required to assemble various components of the machine by studying their engineering drawings, fitting different components of the machine and testing the assembled machine

Personal Attributes

This job requires the individual to work independently as well as in teams. He should have analytical skills, problem solving attitude, high concentration levels and willingness to work in a factory environment.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. [ISC/N0008: Use basic health and safety practices at the workplace](#)
2. [ISC/N0009: Work effectively with others](#)
3. [ISC/N1001: Prepare for assembling operation](#)
4. [ISC/N1002: Assemble the electrical components](#)
5. [ISC/N1003: Perform post - assembly activities](#)
6. [ISC/N1004: Carry out housekeeping](#)
7. [ISC/N1005: Carry out reporting and documentation](#)
8. [ISC/N1006: Carry out quality checks](#)
9. [ISC/N1007: Carry out problem identification and escalation](#)

Qualification Pack (QP) Parameters

Sector	Iron & Steel
Sub-Sector	Steel, Sponge Iron, Ferro Alloys, Re-Rollers, Refractory
Occupation	Electrical Maintenance
Country	India
NSQF Level	3



Qualification Pack

Aligned to NCO/ISCO/ISIC Code	NCO-2004/NIL
Minimum Educational Qualification & Experience	12th Class (Science) with 2-3 Years of 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
Minimum Level of Education for Training in School	10th Class
Pre-Requisite License or Training	Theoretical concepts on machine handling and electrical panels Trainings on operation of machinery and electrical panels
Minimum Job Entry Age	18 Years
Last Reviewed On	30/12/2014
Next Review Date	30/06/2020
NSQC Approval Date	18/06/2015
Version	1.0



Qualification Pack

ISC/N0008: Use basic health and safety practices at the workplace

Description

This OS unit is about knowledge and practices relating to health, safety and security that candidates need to use in the workplace. It covers responsibilities towards self, others, assets and the environment. It includes understanding of risks and hazards in the workplace, along with common techniques to minimize risk, deal with accidents, emergencies, etc

Scope

This unit/task covers the following: Health and safety procedures Fire safety procedures Emergencies, rescue and first aid procedures Prepare the fabrication/ machining equipment Identify tools and moulds required for fabrication Prepare material required during fabrication of components Ensuring housekeeping and safety on the shop-floor

Elements and Performance Criteria

Health and safety

To be competent, the user/individual on the job must be able to:

- PC1.** Use protective clothing/equipment for specific tasks and work conditions Protective clothing includes: Leather or asbestos gloves Flame proof aprons Flame proof overalls buttoned to neck Cuff less (without folds) trousers Reinforced footwear Helmets/hard hats Cap and shoulder covers Ear defenders/plugs Safety boots Knee pads Particle masks Glasses/gloves/visors Equipment includes: Hand shields Machine guards Residual current devices Shields Dust sheets Respirator

Health and safety procedures

To be competent, the user/individual on the job must be able to:

- PC2.** State the name and location of people responsible for health and safety in the workplace Various areas are listed below: On chemical containers Equipment Packages Inside buildings Open areas and public spaces, etc.
- PC3.** State the names and location of documents that refer to health and safety in the workplace
- PC4.** Identify job-site hazardous work and state possible causes of risk or accident in the workplace Hazards include: Working with electrical and thermal tools and equipment Sharp edged and heavy tools Heated metals Oxyfuel and gas cylinders Welding radiation Surfaces: sharp, slippery, uneven, chipped, broken, etc. Substances: chemicals, gas, oxy-fuel, fumes, dust, etc. Physical: working at heights, large and heavy objects and machines, sharp and piercing objects, tools and machines, intense light, load noise, obstructions in corridors, by doors, blind turns, noise, over stacked shelves and packages, etc. Electrical: power supply and points, loose and naked cables and wires, electrical machines and appliances, etc.



Qualification Pack

- PC5.** Carry out safe working practices while dealing with hazards to ensure the safety of self and others state methods of accident prevention in the work environment of the job role Safe working practices include: Using protective clothing and equipment Putting up and reading safety signs Handle tools in the correct manner and store and maintain them properly Keep work area clear of clutter, spillage and unsafe object lying casually While working with electricity take all electrical precautions like insulated clothing, adequate equipment insulation, use of control equipment, dry work area, switch off the power supply when not required, etc. Safe lifting and carrying practices Use equipment that is working properly and is well maintained Take due measures for safety while working in confined places, trenches or at heights, etc. Including safety harness, fall arrestors, etc. Methods are: Training in health and safety procedures Using health and safety procedures Use of equipment and working practices (such as safe carrying procedures) Safety notices, advice Instruction from colleagues and supervisors
- PC6.** State location of general health and safety equipment in the workplace
- PC7.** Inspect for faults, set up and safely use steps and ladders in general use Faults : Corrosion of metal components Deterioration Splits and cracks timber components Imbalance Loose rungs Nuts or bolts, etc. Set up: Firm/level base Clip/lash down Leaning at the correct angle, etc.
- PC8.** Work safely in and around trenches, elevated places and confined areas
- PC9.** Lift heavy objects safely using correct procedures
- PC10.** Apply good housekeeping practices at all times. Good housekeeping practices: Clean/tidy work areas Removal/disposal of waste products Protect surfaces
- PC11.** Identify common hazard signs displayed in various areas
- PC12.** Retrieve and/or point out documents that refer to health and safety in the workplace

Fire safety procedures

To be competent, the user/individual on the job must be able to:

- PC13.** Use the various appropriate fire extinguishers on different types of fires correctly. Fire extinguishers: Sand Water Foam Co2 Dry powder Fires: Class A: Ordinary solid combustibles, e.g. wood, paper, cloth, plastic, charcoal etc. Class B: Flammable liquids and gases, e.g. gasoline, propane, diesel fuel, tar, cooking oil and similar substances Class C: Electrical equipment e.g. appliances, wiring, breaker panels etc. (these categories of fires become Class A, B, and D fires when the electrical equipment that initiated the fire is no longer receiving electricity) Class D: Combustible metals such as magnesium, titanium, and sodium (these fires burn at extremely high temperatures and require special suppression agents) Causes of fires: Heating of metal Spontaneous ignition Sparking, Electrical heating Loose fires (e.g. Smoking, welding, etc.) Chemical fires, etc.

- PC14.** Demonstrate rescue techniques applied during fire hazard
- PC15.** Demonstrate good housekeeping in order to prevent fire hazards
- PC16.** Demonstrate the correct use of a fire extinguisher

Emergencies, rescue and first-aid procedures

To be competent, the user/individual on the job must be able to:

- PC17.** Demonstrate how to free a person from electrocution
- PC18.** Administer appropriate first aid to victims as required e.g. in case of bleeding, burns, choking, electric shock, poisoning etc.
- PC19.** Demonstrate basic techniques of bandaging



Qualification Pack

- PC20.** Respond promptly and appropriately to an accident situation or medical emergency in real or simulated environments. few General health and safety equipment are mentioned below :
Fire extinguishers First aid equipment Safety instruments and clothing Safety installations, e.g. Fire exits, exhaust fans etc.
- PC21.** Perform and organize loss minimization or rescue activity during an accident in real or simulated environments
- PC22.** Administer first aid to victims in case of a heart attack or cardiac arrest due to electric shock, before the arrival of emergency services in real or simulated cases
- PC23.** Demonstrate the artificial respiration and the CPR Process
- PC24.** Participate in emergency procedures. Emergency procedures are: Raising alarm
Safe/efficient evacuation Correct means of escape Correct assembly point Roll call Correct return to work
- PC25.** Complete a written accident/incident report or dictate a report to another person, and send report to person responsible Incident Report should capture: Name Date/time of incident Date/time of report, Location Environment conditions Persons involved Sequence of events Injuries sustained Damage sustained Actions taken Witnesses Supervisor/manager notified Documents: Fire notices Accident reports Safety instructions for equipment and procedures Company notices and documents Legal documents (e.g. Government notices) Job titles: ISC/N0008: Use basic health and safety practices at the workplace Health and safety officer First aid officer Fire officer
- PC26.** Demonstrate correct method to move injured people and others during an emergency

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** State the names (and job titles if applicable), and describe where to find, all the people responsible for health and safety in a workplace
- KU2.** State the names and location of documents that refer to health and safety in the workplace
- KU3.** Meaning of hazards and risks
- KU4.** Health and safety hazards commonly present in the work environment and related precautions
- KU5.** Possible causes of risk, hazard or accident in the workplace and why risk and/or accidents are possible
- KU6.** Activities and causes of risk and accident
- KU7.** Methods of accident prevention
- KU8.** Safe working practices when working with tools and machines
- KU9.** Safe working practices while working at various hazardous sites
- KU10.** Where to find all the general health and safety equipment in the workplace
- KU11.** Various dangers associated with the use of electrical equipment
- KU12.** Preventative and remedial actions to be taken in the case of exposure to toxic materials.
Exposure: ingested, contact with skin, inhaled Preventative action: ventilation, masks, protective clothing/equipment Remedial action: immediate first aid, report to supervisor
Materials: solvents, flux, lead
- KU13.** Importance of using protective clothing/equipment while working



Qualification Pack

- KU14.** Precautionary activities to prevent the fire accident Activities and causes: Physical actions Reading Listening to and giving instructions Inattention Sickness and incapacity (e.g. Drunkenness) Health hazards (e.g. Untreated injuries and contagious illness)
- KU15.** Various causes of fire
- KU16.** Techniques of using the different fire extinguishers
- KU17.** Different methods of extinguishing fire
- KU18.** Rescue techniques applied during a fire hazard
- KU19.** Various types of safety signs and what they mean
- KU20.** Appropriate basic first aid treatment relevant to the condition e.g. Shock, electrical shock, bleeding, breaks to bones, minor burns, resuscitation, poisoning, eye injuries
- KU21.** Content of written accident report
- KU22.** Potential injuries and ill health associated with incorrect manual handling
- KU23.** Safe lifting and carrying practices
- KU24.** Personal safety, health and dignity issues relating to the movement of a person by others
- KU25.** Potential impact to a person who is moved incorrectly

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** Read and comprehend basic content to read labels, charts, signages
- GS2.** Read and comprehend basic English to read manuals of operations
- GS3.** Read and write an accident/incident report in local language or English
- GS4.** Question co-workers appropriately in order to clarify instructions and other issues
- GS5.** Give clear instructions to co-workers, subordinates others
- GS6.** Make appropriate decisions pertaining to the concerned area of work with respect to intended work objective, span of authority, responsibility, laid down procedure and guidelines
- GS7.** Plan and organize their own work schedule, work area, tools, equipment and materials to maintain decorum and for improved productivity
- GS8.** Remain congenial while discussing and debating issues with co-workers
- GS9.** Follow appropriate protocols for communication based on situation, hierarchy, organizational culture and practice
- GS10.** Ask for, provide and receive required assistance where possible to ensure achievement of work related objectives
- GS11.** Thank co-workers for any assistance received
- GS12.** Offer appropriate respect based on mutuality and respect for fellow workmanship and authority
- GS13.** Think through the problem, evaluate the possible solution(s) and suggest an optimum /best possible solution(s)
- GS14.** Identify immediate or temporary solutions to resolve delays
- GS15.** Identify sources of support that can be availed of for problem solving for various kind of problems



Qualification Pack

- GS16.** Report problems that you cannot resolve to appropriate authority
- GS17.** Identify cause and effect relations in their area of work
- GS18.** Use cause and effect relations to anticipate potential problems and their solution



Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Health and safety</i>	5	5	-	-
PC1. Use protective clothing/equipment for specific tasks and work conditions Protective clothing includes: Leather or asbestos gloves Flame proof aprons Flame proof overalls buttoned to neck Cuff less (without folds) trousers Reinforced footwear Helmets/hard hats Cap and shoulder covers Ear defenders/plugs Safety boots Knee pads Particle masks Glasses/gloves/visors Equipment includes: Hand shields Machine guards Residual current devices Shields Dust sheets Respirator	5	5	-	-
<i>Health and safety procedures</i>	15	40	-	-
PC2. State the name and location of people responsible for health and safety in the workplace Various areas are listed below: On chemical containers Equipment Packages Inside buildings Open areas and public spaces, etc.	-	4	-	-
PC3. State the names and location of documents that refer to health and safety in the workplace	-	1	-	-
PC4. Identify job-site hazardous work and state possible causes of risk or accident in the workplace Hazards include: Working with electrical and thermal tools and equipment Sharp edged and heavy tools Heated metals Oxyfuel and gas cylinders Welding radiation Surfaces: sharp, slippery, uneven, chipped, broken, etc. Substances: chemicals, gas, oxy-fuel, fumes, dust, etc. Physical: working at heights, large and heavy objects and machines, sharp and piercing objects, tools and machines, intense light, load noise, obstructions in corridors, by doors, blind turns, noise, over stacked shelves and packages, etc. Electrical: power supply and points, loose and naked cables and wires, electrical machines and appliances, etc.	5	5	-	-



Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC5. Carry out safe working practices while dealing with hazards to ensure the safety of self and others state methods of accident prevention in the work environment of the job role Safe working practices include: Using protective clothing and equipment Putting up and reading safety signs Handle tools in the correct manner and store and maintain them properly Keep work area clear of clutter, spillage and unsafe object lying casually While working with electricity take all electrical precautions like insulated clothing, adequate equipment insulation, use of control equipment, dry work area, switch off the power supply when not required, etc. Safe lifting and carrying practices Use equipment that is working properly and is well maintained Take due measures for safety while working in confined places, trenches or at heights, etc. Including safety harness, fall arrestors, etc. Methods are: Training in health and safety procedures Using health and safety procedures Use of equipment and working practices (such as safe carrying procedures) Safety notices, advice Instruction from colleagues and supervisors	5	5	-	-
PC6. State location of general health and safety equipment in the workplace	-	5	-	-
PC7. Inspect for faults, set up and safely use steps and ladders in general use Faults : Corrosion of metal components Deterioration Splits and cracks timber components Imbalance Loose rungs Nuts or bolts, etc. Set up: Firm/level base Clip/lash down Leaning at the correct angle, etc.	-	5	-	-
PC8. Work safely in and around trenches, elevated places and confined areas	-	4	-	-
PC9. Lift heavy objects safely using correct procedures	-	4	-	-
PC10. Apply good housekeeping practices at all times. Good housekeeping practices: Clean/tidy work areas Removal/disposal of waste products Protect surfaces	-	1	-	-
PC11. Identify common hazard signs displayed in various areas	5	1	-	-
PC12. Retrieve and/or point out documents that refer to health and safety in the workplace	-	5	-	-



Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Fire safety procedures</i>	10	15	-	-
PC13. Use the various appropriate fire extinguishers on different types of fires correctly. Fire extinguishers: Sand Water Foam Co2 Dry powder Fires: Class A: Ordinary solid combustibles, e.g. wood, paper, cloth, plastic, charcoal etc. Class B: Flammable liquids and gases, e.g. gasoline, propane, diesel fuel, tar, cooking oil and similar substances Class C: Electrical equipment e.g. appliances, wiring, breaker panels etc. (these categories of fires become Class A, B, and D fires when the electrical equipment that initiated the fire is no longer receiving electricity) Class D: Combustible metals such as magnesium, titanium, and sodium (these fires burn at extremely high temperatures and require special suppression agents) Causes of fires: Heating of metal Spontaneous ignition Sparking, Electrical heating Loose fires (e.g. Smoking, welding, etc.) Chemical fires, etc.	5	5	-	-
PC14. Demonstrate rescue techniques applied during fire hazard	5	5	-	-
PC15. Demonstrate good housekeeping in order to prevent fire hazards	-	1	-	-
PC16. Demonstrate the correct use of a fire extinguisher	-	4	-	-
<i>Emergencies, rescue and first-aid procedures</i>	15	45	-	-
PC17. Demonstrate how to free a person from electrocution	-	5	-	-
PC18. Administer appropriate first aid to victims as required e.g. in case of bleeding, burns, choking, electric shock, poisoning etc.	5	5	-	-
PC19. Demonstrate basic techniques of bandaging	-	5	-	-
PC20. Respond promptly and appropriately to an accident situation or medical emergency in real or simulated environments. few General health and safety equipment are mentioned below : Fire extinguishers First aid equipment Safety instruments and clothing Safety installations, e.g. Fire exits, exhaust fans etc.	5	5	-	-



Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC21. Perform and organize loss minimization or rescue activity during an accident in real or simulated environments	-	5	-	-
PC22. Administer first aid to victims in case of a heart attack or cardiac arrest due to electric shock, before the arrival of emergency services in real or simulated cases	-	5	-	-
PC23. Demonstrate the artificial respiration and the CPR Process	-	5	-	-
PC24. Participate in emergency procedures. Emergency procedures are: Raising alarm Safe/efficient evacuation Correct means of escape Correct assembly point Roll call Correct return to work	-	4	-	-
PC25. Complete a written accident/incident report or dictate a report to another person, and send report to person responsible Incident Report should capture: Name Date/time of incident Date/time of report, Location Environment conditions Persons involved Sequence of events Injuries sustained Damage sustained Actions taken Witnesses Supervisor/manager notified Documents: Fire notices Accident reports Safety instructions for equipment and procedures Company notices and documents Legal documents (e.g. Government notices) Job titles: ISC/N0008: Use basic health and safety practices at the workplace Health and safety officer First aid officer Fire officer	5	5	-	-
PC26. Demonstrate correct method to move injured people and others during an emergency	-	1	-	-
NOS Total	45	105	-	-



Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	ISC/N0008
NOS Name	Use basic health and safety practices at the workplace
Sector	Iron & Steel
Sub-Sector	Steel, Sponge Iron, Ferro Alloys, Re-Rollers, Refractory
Occupation	Mechanical Maintenance
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	25/03/2015
Next Review Date	01/04/2017
NSQC Clearance Date	18/06/2014



ISC/N0009: Work effectively with others

Description

This unit covers basic etiquette and competencies that a candidate is required to possess and demonstrate in their behaviour and interactions with others at the workplace

Scope

This unit/task covers the following: Ensure appropriate communication with superiors, peers and others as applicable at work place Demonstrate appropriate behaviour and etiquette at work place

Elements and Performance Criteria

Ensure appropriate communication with superiors, peers and others as applicable at work place

To be competent, the user/individual on the job must be able to:

- PC1.** Accurately receive information and instructions from the supervisor and fellow workers, getting clarification where required
- PC2.** Accurately pass on information to authorized persons who require it and within agreed timescale and confirm its receipt
- PC3.** Provide information to others clearly, at a pace and in a manner that helps them to understand

Demonstrate appropriate behaviour and etiquette at work place

To be competent, the user/individual on the job must be able to:

- PC4.** Display helpful behaviour by assisting others in performing tasks in a positive manner, where required and possible
- PC5.** Consult with and assist others to maximize effectiveness and efficiency in carrying out tasks
- PC6.** Display appropriate communication etiquette while working
- PC7.** Display active listening skills while interacting with others at work
- PC8.** Use appropriate tone, pitch and language to convey politeness, assertiveness, care and professionalism
- PC9.** Demonstrate responsible and disciplined behaviours at the workplace
- PC10.** Escalate grievances and problems to

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** Legislation, standards, policies, and procedures followed in the company relevant to own employment and performance conditions
- KU2.** Reporting structure, inter-dependent functions, lines and procedures in the work area
- KU3.** Relevant people and their responsibilities within the work area
- KU4.** Escalation matrix and procedures for reporting work and employment related issues



Qualification Pack

- KU5.** Various categories of people that one is required to communicate and co ordinate with in the organization
- KU6.** Importance of effective communication in the workplace
- KU7.** Importance of teamwork in organizational and individual success
- KU8.** Various components of effective communication
- KU9.** Key elements of active listening
- KU10.** Value and importance of active listening and assertive communication
- KU11.** Barriers to effective communication
- KU12.** Importance of tone and pitch in effective communication
- KU13.** Importance of avoiding casual expletives and unpleasant terms while communicating professional circles
- KU14.** How poor communication practices can disturb people, environment and cause problems for the employee, the employer and the customer
- KU15.** Importance of ethics for professional success
- KU16.** Importance of discipline for professional success
- KU17.** What constitutes disciplined behaviour for a working professional
- KU18.** Common reasons for interpersonal conflict
- KU19.** Importance of developing effective working relationships for professional success
- KU20.** Expressing and addressing grievances appropriately and effectively
- KU21.** Importance and ways of managing interpersonal conflict effectively

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** Read and comprehend basic content to read labels, charts, signages
- GS2.** Read and comprehend basic English to read manuals of operations
- GS3.** Read and write an accident/incident report in local language or English
- GS4.** Question co-workers appropriately in order to clarify instructions and other issues
- GS5.** Provide clear instructions to co-workers, subordinates others
- GS6.** Make appropriate decisions pertaining to the concerned area of work with respect to intended work objective, span of authority, responsibility, laid down
- GS7.** Plan and organize their own work schedule, work area, tools, equipment and materials to maintain decorum and for improved productivity
- GS8.** Remain congenial while discussing and debating issues with co-workers
- GS9.** Follow appropriate protocols for communication based on situation, hierarchy, organizational culture and practice
- GS10.** Ask for, provide and receive required assistance where possible to ensure achievement of work related objectives
- GS11.** Thank co-workers for any assistance received
- GS12.** Offer appropriate respect based on mutuality and respect for fellow workmanship and authority



Qualification Pack

- GS13.** Think through the problem, evaluate the possible solution(s) and suggest an optimum /best possible solution(s)
- GS14.** Identify immediate or temporary solutions to resolve delays
- GS15.** Identify sources of support that can be availed of for problem solving for various kind of problems
- GS16.** Identify sources of support that can be availed of for problem solving for various kind of problems
- GS17.** Report problems that you cannot resolve to appropriate authority
- GS18.** Identify cause and effect relations in their area of work
- GS19.** Use cause and effect relations to anticipate potential problems and their solution



Qualification Pack



Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Ensure appropriate communication with superiors, peers and others as applicable at work place</i>	10	20	-	-
PC1. Accurately receive information and instructions from the supervisor and fellow workers, getting clarification where required	5	5	-	-
PC2. Accurately pass on information to authorized persons who require it and within agreed timescale and confirm its receipt	5	5	-	-
PC3. Provide information to others clearly, at a pace and in a manner that helps them to understand	-	10	-	-
<i>Demonstrate appropriate behaviour and etiquette at work place</i>	20	50	-	-
PC4. Display helpful behaviour by assisting others in performing tasks in a positive manner, where required and possible	5	5	-	-
PC5. Consult with and assist others to maximize effectiveness and efficiency in carrying out tasks	5	5	-	-
PC6. Display appropriate communication etiquette while working	-	10	-	-
PC7. Display active listening skills while interacting with others at work	-	10	-	-
PC8. Use appropriate tone, pitch and language to convey politeness, assertiveness, care and professionalism	5	5	-	-
PC9. Demonstrate responsible and disciplined behaviours at the workplace	5	10	-	-
PC10. Escalate grievances and problems to	-	5	-	-
NOS Total	30	70	-	-



Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	ISC/N0009
NOS Name	Work effectively with others
Sector	Iron & Steel
Sub-Sector	Steel, Sponge Iron, Ferro Alloys, Re-Rollers, Refractory
Occupation	Mechanical Maintenance
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	30/12/2014
Next Review Date	01/04/2017
NSQC Clearance Date	18/06/2015



Qualification Pack

ISC/N1001: Prepare for assembling operation

Description

This unit is about understanding engineering designs and preparing equipment and tools for assembling operation

Scope

This unit/task covers the following: Understanding the engineering drawings Prepare equipment to perform the assembling of components Ensure material appropriateness for assembly Ensuring housekeeping and safety on the shop floor

Elements and Performance Criteria

Understanding the engineering drawings

To be competent, the user/individual on the job must be able to:

- PC1.** understand assembly blueprints, engineering drawings and other specifications to identify the sequence of activities required to assemble the machine
- PC2.** read and interpret engineering drawings to ensure correct limits, tolerance and fits of equipment components
- PC3.** report and rectify cases of inappropriate information in design documents as per organizational procedures

Prepare equipment to perform the assembling of components

To be competent, the user/individual on the job must be able to:

- PC4.** identify tools and equipment required to perform the assembling of components
- PC5.** collect tools required during the assembling process
- PC6.** ensure that tools match the desired specifications
- PC7.** ensure tools and equipment required for assembly are free from physical damage and ready for operation
- PC8.** report damaged / defective components of equipment as per the escalation matrix
- PC9.** ensure the calibration status of all measuring equipment and instruments
- PC10.** prepare the foundation base as per the job requirements i.e. cleaning using hand files, scraper etc.
- PC11.** use braces, jacks, clamps, ropes or bolt straps to hold parts in position

Ensure material appropriateness for assembly

To be competent, the user/individual on the job must be able to:

- PC12.** collect work pieces/ components to be assembled
- PC13.** ensure that each material is in the correct quantity
- PC14.** ensure, by visual inspection, that work pieces are of desired quality (free of rust, type of metal, etc.)
- PC15.** ensure that paint, grease, rust, or other contaminants are removed from work pieces
- PC16.** smoothen out the metal work piece prior to assembling



Qualification Pack

PC17. ensure that no delays are caused as a result of improper preparation and failure to identify problems

Ensuring housekeeping and safety on the shopfloor

To be competent, the user/individual on the job must be able to:

PC18. ensure housekeeping and safety in work area

PC19. ensure that the exhaust systems are used to maintain the concentration levels of various particulate matters remain within limits

PC20. ensure use of mask during grinding to avoid inhaling the dust

PC21. ensure that the loose and torn clothes are not worn during working hours

PC22. ensure using hoist or forklift for lifting heavy materials to avoid physical injury

PC23. adhere to all other safety norms (like wearing shoes, gloves, safety goggles etc)

PC24. ensure that unpermitted materials such as fuels, paints etc are removed from the work area

PC25. comply with health, safety, environment guidelines, regulations etc in accordance with organizational sop

PC26. identify any potential health hazards or dangers and escalate to supervisor as per organizational sop

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. use of instruments to check dimensions etc.

KU2. implications of poorly prepared material, power failure etc.

KU3. material disposal procedure, importance of appropriate disposal of material and implications of not following the material disposal procedure

KU4. quality and damage checks to be done and importance of the same

KU5. risk and impact of not following defined procedures/work instructions

KU6. escalation matrix for reporting identified issues

KU7. types of documentation in organization and importance of the same

KU8. records to be maintained and implications of non-maintenance of the same

KU9. importance of housekeeping & good shop floor practices (e.g. 3s & 5s)

KU10. health, safety and environment guidelines, legislation and regulations as applicable

KU11. personal protection(which protective equipment to be used and how)

KU12. impact of poor practices on health, safety and environment

KU13. potential hazards and actions to minimize the same

KU14. escalation matrix and escalation procedure for reporting hazards

KU15. know how knowledge of shut down procedures

KU16. knowledge of electrical panel & control circuits

KU17. assembling techniques such as aligning, bending, fixing, mechanical jointing, threaded jointing, sealing and torquing

KU18. steps required to assemble/ dis-assemble an equipment with a given design



Qualification Pack

- KU19.** checks that need to be made to ensure that equipment is safe and ready to use (electrical connections, power return and earthing arrangements; equipment calibration, setting parameters)
- KU20.** limits, fits and tolerances
- KU21.** procedures to check adherence to specifications and quality standards of equipment like vernier calliper, screw gauge, etc
- KU22.** engineering drawings and tools drawings
- KU23.** understanding of normal running characteristics of machines
- KU24.** possible causes of common problems during assembly & their remedies
- KU25.** implications of not adhering to sequence of activities and operations
- KU26.** units of measurement
- KU27.** response to emergencies e.g. power failures ,fire and system failures

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** construct simple sentences and express ideas clearly through written communication
- GS2.** fill up appropriate technical forms, process charts, activity logs in required format of the company
- GS3.** write simple letters, mails, etc.
- GS4.** read and interpret engineering/ machine drawings and electrical panel
- GS5.** read and understand manuals, health and safety instructions, memos, reports, job cards, etc
- GS6.** express statements, opinions or information clearly so that others can hear and understand
- GS7.** respond appropriately to any queries
- GS8.** communicate with supervisor
- GS9.** communicate with upstream and downstream teams
- GS10.** work in a team and other behavioural skills required to support the small group activities (quality circle, cross functional team, suggestion scheme)
- GS11.** practice honesty with respect to company property and time
- GS12.** communicate with people in a form and manner and using language that is open and respectful
- GS13.** resolve any difficulties in relationships with colleagues , or get help from an appropriate person, in a way that preserves goodwill and trust
- GS14.** take responsibility for completing ones own work assignment
- GS15.** take initiative to enhance/learn skills in other areas of work
- GS16.** the capacity to learn from experience in a range of settings and scenarios and the capacity to reflect on and analyse ones learning
- GS17.** is open to new ways of doing things
- GS18.** avoid absenteeism
- GS19.** act objectively , rather than impulsively or emotionally when faced with difficult/stressful or emotional situations
- GS20.** work in disciplined factory environment



Qualification Pack

GS21. be punctual

GS22. diagnose common problems in the tools based on visual inspection, sound, temperature etc.

GS23. suggest improvements(if any) in process based on experience



Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Understanding the engineering drawings</i>	13	14	-	-
PC1. understand assembly blueprints, engineering drawings and other specifications to identify the sequence of activities required to assemble the machine	5	5	-	-
PC2. read and interpret engineering drawings to ensure correct limits, tolerance and fits of equipment components	5	5	-	-
PC3. report and rectify cases of inappropriate information in design documents as per organizational procedures	3	4	-	-
<i>Prepare equipment to perform the assembling of components</i>	16	34	-	-
PC4. identify tools and equipment required to perform the assembling of components	2	3	-	-
PC5. collect tools required during the assembling process	-	4	-	-
PC6. ensure that tools match the desired specifications	2	3	-	-
PC7. ensure tools and equipment required for assembly are free from physical damage and ready for operation	2	3	-	-
PC8. report damaged / defective components of equipment as per the escalation matrix	2	6	-	-
PC9. ensure the calibration status of all measuring equipment and instruments	2	6	-	-
PC10. prepare the foundation base as per the job requirements i.e. cleaning using hand files, scraper etc.	4	6	-	-
PC11. use braces, jacks, clamps, ropes or bolt straps to hold parts in position	2	3	-	-
<i>Ensure material appropriateness for assembly</i>	12	20	-	-



Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. collect work pieces/ components to be assembled	2	2	-	-
PC13. ensure that each material is in the correct quantity	2	2	-	-
PC14. ensure, by visual inspection, that work pieces are of desired quality (free of rust, type of metal, etc.)	2	6	-	-
PC15. ensure that paint, grease, rust, or other contaminants are removed from work pieces	2	2	-	-
PC16. smoothen out the metal work piece prior to assembling	2	6	-	-
PC17. ensure that no delays are caused as a result of improper preparation and failure to identify problems	2	2	-	-
<i>Ensuring housekeeping and safety on the shopfloor</i>	10	31	-	-
PC18. ensure housekeeping and safety in work area	-	4	-	-
PC19. ensure that the exhaust systems are used to maintain the concentration levels of various particulate matters remain within limits	-	4	-	-
PC20. ensure use of mask during grinding to avoid inhaling the dust	-	4	-	-
PC21. ensure that the loose and torn clothes are not worn during working hours	-	4	-	-
PC22. ensure using hoist or forklift for lifting heavy materials to avoid physical injury	2	3	-	-
PC23. adhere to all other safety norms (like wearing shoes, gloves, safety goggles etc)	2	3	-	-
PC24. ensure that unpermitted materials such as fuels, paints etc are removed from the work area	2	3	-	-
PC25. comply with health, safety, environment guidelines, regulations etc in accordance with organizational sop	2	3	-	-



Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC26. identify any potential health hazards or dangers and escalate to supervisor as per organizational sop	2	3	-	-
NOS Total	51	99	-	-



Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	ISC/N1001
NOS Name	Prepare for assembling operation
Sector	Iron & Steel
Sub-Sector	Steel, Sponge Iron, Ferro Alloys, Re-Rollers, Refractory
Occupation	Mechanical Maintenance
NSQF Level	3
Credits	TBD
Version	1.0
Last Reviewed Date	30/12/2014
Next Review Date	01/04/2017
NSQC Clearance Date	18/06/2015



Qualification Pack

ISC/N1002: Assemble the electrical components

Description

This unit is about assembling various components as per the engineering/ product design

Scope

This unit/task covers the following: Preparing Equipments and Machines and Electrical panels Assembling operation of various components of machines/equipment Ensuring housekeeping and safety on the shop floor

Elements and Performance Criteria

Preparing Equipments and Machines and Electrical panels

To be competent, the user/individual on the job must be able to:

- PC1.** ensure all tools and equipment required during assembly are ready for operation
- PC2.** ensure the calibration status of all measuring equipment and instruments
- PC3.** prepare control cables, electrical components like mcbs, contactors, relays etc. as per drawing requirement

Assembling operation of various components of machines/equipment

To be competent, the user/individual on the job must be able to:

- PC4.** lift and move components using handling equipment such as hoist or crane or manual methods

Assembling operation of various components of machines/equipment

To be competent, the user/individual on the job must be able to:

- PC5.** use file, chisel and grind parts to align or level the components to be assembled as per the design/ manufacturers specifications
- PC6.** demonstrate use of machinery such as insulation testers, multi meters, etc knife to cut or bore holes in the structure
- PC7.** demonstrate use of tools such as saws, cutting torches, pipe thread or benders to cut, thread or bend parts as per the specifications
- PC8.** fasten mechanical components/ subassemblies together using screws, bolts, and collars using hand/ power tools
- PC9.** set and adjust linkages, tensions and clearances of assembled components to specifications using fixed gauges and hand tools
- PC10.** use of wires, stripers, crimping tools and other insulated tools

Ensuring housekeeping and safety on the shop floor

To be competent, the user/individual on the job must be able to:

- PC11.** ensure housekeeping and safety in work area

Ensuring housekeeping and safety on the shop floor

To be competent, the user/individual on the job must be able to:

- PC12.** ensure that the exhaust systems are used to maintain the concentration levels of various particulate matters remain within limits



Qualification Pack

- PC13.** ensure use of mask during grinding to avoid inhaling the dust
- PC14.** ensure that the loose and torn clothes are not worn during working hours
- PC15.** ensure using hoist or forklift for lifting heavy materials to avoid physical injury
- PC16.** adhere to all other safety norms (like wearing electrical safety shoes, gloves, safety goggles etc.)
- PC17.** comply with health, safety, environment guidelines, regulations etc. in accordance with organizational sop
- PC18.** identify any potential health hazards or dangers and escalate to supervisor as per organizational sop
- PC19.** ensure use of insulated hand gloves and electrical safety shoes

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** use of instruments (multimeter, toing tester, megar) and to check dimensions, continuity, insulation resistance etc.
- KU2.** implications of poorly prepared material, power failure etc.
- KU3.** material disposal procedure, importance of appropriate disposal of material and implications of not following the material disposal procedure
- KU4.** quality and damage checks to be done and importance of the same
- KU5.** risk and impact of not following defined procedures/work instructions
- KU6.** escalation matrix for reporting identified issues
- KU7.** records to be maintained and implications of non-maintenance of the same
- KU8.** importance of housekeeping & good shop floor practices (e.g. 3s & 5s)
- KU9.** health, safety and environment guidelines, legislation and regulations as applicable
- KU10.** personal protection(which protective equipment to be used and how)
- KU11.** impact of poor practices on health, safety and environment
- KU12.** potential hazards and actions to minimize the same
- KU13.** escalation matrix and escalation procedure for reporting hazards
- KU14.** assembling techniques such as aligning, bending, fixing, mechanical jointing, threaded jointing, sealing, torqueing, electrical cable jointing and termination, light fitting
- KU15.** steps required to assemble/ dis-assemble an equipment with a given design
- KU16.** checks that need to be made to ensure that equipment is safe and ready to use (electrical connections, power return and earthing arrangements; equipmentcalibration, setting parameters)
- KU17.** limits, fits and tolerances
- KU18.** engineering drawings
- KU19.** possible causes of common problems during assembly & their remedies
- KU20.** units of measurement
- KU21.** response to emergencies e.g. power failures ,fire and system failures

Generic Skills (GS)



Qualification Pack

User/individual on the job needs to know how to:

- GS1.** construct simple sentences and express ideas clearly through written communication
- GS2.** fill up appropriate technical forms, process charts, activity logs in required format of the company
- GS3.** write simple letters, mails, etc.
- GS4.** read and interpret engineering/ machine drawings
- GS5.** read and understand manuals, health and safety instructions, memos, reports, job cards etc.
- GS6.** express statements, opinions or information clearly so that others can hear and understand
- GS7.** respond appropriately to any queries
- GS8.** communicate with supervisor
- GS9.** communicate with upstream and downstream teams
- GS10.** work in a team and other behavioural skills required to support the small group activities (quality circle, cross functional team, suggestion scheme)
- GS11.** practice honesty with respect to company property and time
- GS12.** communicate with people in a form and manner and using language that is open and respectful
- GS13.** resolve any difficulties in relationships with colleagues , or get help from an appropriate person, in a way that preserves goodwill and trust
- GS14.** take responsibility for completing ones own work assignment
- GS15.** take initiative to enhance/learn skills in other areas of work
- GS16.** the capacity to learn from experience in a range of settings and scenarios and the capacity to reflect on and analyse ones learning
- GS17.** is open to new ways of doing things
- GS18.** the capacity to envisage and articulate personal goals; to develop strategies and take action to achieve them
- GS19.** avoid absenteeism
- GS20.** act objectively , rather than impulsively or emotionally when faced with difficult/stressful or emotional situations
- GS21.** work in disciplined factory environment
- GS22.** be punctual
- GS23.** diagnose common problems in the tools based on visual inspection, sound, temperature etc.
- GS24.** suggest improvements(if any) in process based on experience



Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Preparing Equipments and Machines and Electrical panels</i>	11	25	-	-
PC1. ensure all tools and equipment required during assembly are ready for operation	2	6	-	-
PC2. ensure the calibration status of all measuring equipment and instruments	4	4	-	-
PC3. prepare control cables, electrical components like mcbs, contactors, relays etc. as per drawing requirement	5	15	-	-
<i>Assembling operation of various components of machines/equipment</i>	2	6	-	-
PC4. lift and move components using handling equipment such as hoist or crane or manual methods	2	6	-	-
<i>Assembling operation of various components of machines/equipment</i>	14	47	-	-
PC5. use file, chisel and grind parts to align or level the components to be assembled as per the design/ manufacturers specifications	-	10	-	-
PC6. demonstrate use of machinery such as insulation testers, multi meters, etc knife to cut or bore holes in the structure	-	10	-	-
PC7. demonstrate use of tools such as saws, cutting torches, pipe thread or benders to cut, thread or bend parts as per the specifications	4	10	-	-
PC8. fasten mechanical components/ subassemblies together using screws, bolts, and collars using hand/ power tools	4	7	-	-
PC9. set and adjust linkages, tensions and clearances of assembled components to specifications using fixed gauges and hand tools	4	7	-	-
PC10. use of wires, stripers, crimping tools and other insulated tools	2	3	-	-



Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Ensuring housekeeping and safety on the shopfloor</i>	2	3	-	-
PC11. ensure housekeeping and safety in work area	2	3	-	-
<i>Ensuring housekeeping and safety on the shopfloor</i>	16	24	-	-
PC12. ensure that the exhaust systems are used to maintain the concentration levels of various particulate matters remain within limits	2	3	-	-
PC13. ensure use of mask during grinding to avoid inhaling the dust	2	3	-	-
PC14. ensure that the loose and torn clothes are not worn during working hours	2	3	-	-
PC15. ensure using hoist or forklift for lifting heavy materials to avoid physical injury	2	3	-	-
PC16. adhere to all other safety norms (like wearing electrical safety shoes, gloves, safety goggles etc.)	2	3	-	-
PC17. comply with health, safety, environment guidelines, regulations etc. in accordance with organizational sop	2	3	-	-
PC18. identify any potential health hazards or dangers and escalate to supervisor as per organizational sop	2	3	-	-
PC19. ensure use of insulated hand gloves and electrical safety shoes	2	3	-	-
NOS Total	45	105	-	-



Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	ISC/N1002
NOS Name	Assemble the electrical components
Sector	Iron & Steel
Sub-Sector	Steel, Sponge Iron, Ferro Alloys, Re-Rollers, Refractory
Occupation	Mechanical Maintenance
NSQF Level	3
Credits	TBD
Version	1.0
Last Reviewed Date	30/12/2014
Next Review Date	01/04/2017
NSQC Clearance Date	18/06/2015



Qualification Pack

ISC/N1003: Perform post - assembly activities

Description

This unit is about performing post - assembly activities

Scope

This unit/task covers the following: Testing of assembled machine/equipment/electrical panels Disposal of waste Ensuring housekeeping and safety on the shop-floor

Elements and Performance Criteria

Test the assembled machine/equipment/electrical panels

To be competent, the user/individual on the job must be able to:

- PC1.** connect the hydraulic, electrical and other components of the machine/electrical panels
- PC2.** add lubricants and coolants into moving parts as per specifications
- PC3.** carry out functional test of assembled machine/electrical panels to ensure it performs as per desired performance criteria
- PC4.** identify and rectify the problem areas during the functional tests
- PC5.** check the panel interlock and protection logic

Disposal of waste

To be competent, the user/individual on the job must be able to:

- PC6.** dispose-off waste material as per waste disposal procedures laid down by the company
- PC7.** carry out disposal of waste material safely

Ensuring housekeeping and safety on the shop-floor

To be competent, the user/individual on the job must be able to:

- PC8.** ensure housekeeping and safety in work area
- PC9.** ensure that the exhaust systems are used to maintain the concentration levels of various particulate matters remain within limits
- PC10.** ensure that the loose and torn clothes are not worn during working hours
- PC11.** ensure using hoist or forklift for lifting heavy materials to avoid physical injury
- PC12.** adhere to all other safety norms (like wearing electrical shoes, gloves, safety goggles etc.)
- PC13.** remove unpermitted materials such as fuels, paints etc. from the work area
- PC14.** comply with health, safety, environment guidelines, regulations etc. in accordance with organizational SOP
- PC15.** identify any potential health hazards or dangers and escalate to supervisor as per organizational SOP

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** use of instruments to check dimensions etc.



Qualification Pack

- KU2.** implications of poorly prepared material, power failure etc
- KU3.** material disposal procedure, importance of appropriate disposal of material and implications of not following the material disposal procedure
- KU4.** quality and damage checks to be done and importance of the same
- KU5.** risk and impact of not following defined procedures/work instructions
- KU6.** escalation matrix for reporting identified issues
- KU7.** types of documentation in organization and importance of the same
- KU8.** records to be maintained and implications of non-maintenance of the same
- KU9.** importance of housekeeping & good shop floor practices (e.g. 3s & 5s)
- KU10.** health, safety and environment guidelines, legislation and regulations as applicable
- KU11.** personal protection(which protective equipment to be used and how)
- KU12.** impact of poor practices on health, safety and environment
- KU13.** potential hazards and actions to minimize the same
- KU14.** escalation matrix and escalation procedure for reporting hazards
- KU15.** assembling techniques such as aligning, bending, fixing, mechanical jointing, threaded jointing, sealing, torqueing, electrical cable jointing and termination, light fitting
- KU16.** steps required to assemble/ dis-assemble an equipment with a given design
- KU17.** checks that need to be made to ensure that equipment is safe and ready to use (electrical connections, power return and earthing arrangements; equipment calibration, setting parameters)
- KU18.** limits, fits and tolerances
- KU19.** procedures to check adherence to specifications and quality standards using equipment like vernier calliper, screw gauge, etc.
- KU20.** normal running characteristics of machines
- KU21.** engineering drawings and machine drawings / control circuits
- KU22.** possible causes of common problems during assembly & their remedies
- KU23.** implications of not adhering to sequence of activities and operations
- KU24.** units of measurement
- KU25.** response to emergencies e.g. power failures ,fire and system failures
- KU26.** compilation of test results in prescribed format

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** construct simple sentences and express ideas clearly through written communication
- GS2.** fill up appropriate technical forms, process charts, activity logs in required format of the company
- GS3.** write simple letters, mails, etc.
- GS4.** read and interpret engineering/ machine drawings
- GS5.** read and understand manuals, health and safety instructions, memos, reports, job cards etc
- GS6.** express statements, opinions or information clearly so that others can hear and understand



Qualification Pack

- GS7.** respond appropriately to any queries
- GS8.** communicate with supervisor
- GS9.** communicate with upstream and downstream teams
- GS10.** work in a team and other behavioural skills required to support the small group activities (quality circle, cross functional team, suggestion scheme)
- GS11.** practice honesty with respect to company property and time
- GS12.** communicate with people in a form and manner and using language that is open and respectful
- GS13.** resolve any difficulties in relationships with colleagues , or get help from an appropriate person, in a way that preserves goodwill and trust
- GS14.** take responsibility for completing ones own work assignment
- GS15.** take initiative to enhance/learn skills in other areas of work
- GS16.** the capacity to learn from experience in a range of settings and scenarios and the capacity to reflect on and analyse ones learning
- GS17.** is open to new ways of doing things
- GS18.** the capacity to envisage and articulate personal goals; to develop strategies and take action to achieve them
- GS19.** avoid absenteeism
- GS20.** act objectively , rather than impulsively or emotionally when faced with difficult/stressful or emotional situations
- GS21.** work in disciplined factory environment
- GS22.** be punctual
- GS23.** diagnose common problems in the tools based on visual inspection, sound, temperature etc.
- GS24.** suggest improvements(if any) in process based on experience



Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Test the assembled machine/equipment/electrical panels</i>	17	38	-	-
PC1. connect the hydraulic, electrical and other components of the machine/electrical panels	5	10	-	-
PC2. add lubricants and coolants into moving parts as per specifications	3	7	-	-
PC3. carry out functional test of assembled machine/electrical panels to ensure it performs as per desired performance criteria	3	7	-	-
PC4. identify and rectify the problem areas during the functional tests	3	7	-	-
PC5. check the panel interlock and protection logic	3	7	-	-
<i>Disposal of waste</i>	4	5	-	-
PC6. dispose-off waste material as per waste disposal procedures laid down by the company	2	3	-	-
PC7. carry out disposal of waste material safely	2	2	-	-
<i>Ensuring housekeeping and safety on the shop-floor</i>	6	30	-	-
PC8. ensure housekeeping and safety in work area	-	4	-	-
PC9. ensure that the exhaust systems are used to maintain the concentration levels of various particulate matters remain within limits	-	4	-	-
PC10. ensure that the loose and torn clothes are not worn during working hours	-	4	-	-
PC11. ensure using hoist or forklift for lifting heavy materials to avoid physical injury	-	4	-	-
PC12. adhere to all other safety norms (like wearing electrical shoes, gloves, safety goggles etc.)	-	4	-	-
PC13. remove unpermitted materials such as fuels, paints etc. from the work area	2	4	-	-



Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC14. comply with health, safety, environment guidelines, regulations etc. in accordance with organizational SOP	2	3	-	-
PC15. identify any potential health hazards or dangers and escalate to supervisor as per organizational SOP	2	3	-	-
NOS Total	27	73	-	-



Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	ISC/N1003
NOS Name	Perform post - assembly activities
Sector	Iron & Steel
Sub-Sector	Steel, Sponge Iron, Ferro Alloys, Re-Rollers, Refractory
Occupation	Mechanical Maintenance
NSQF Level	3
Credits	TBD
Version	1.0
Last Reviewed Date	30/12/2014
Next Review Date	01/04/2017
NSQC Clearance Date	18/06/2015



ISC/N1004: Carry out housekeeping

Description

This unit is about carrying out housekeeping activities

Scope

This unit/task covers the following: Preparing for housekeeping activities
Carry out housekeeping activities
Post housekeeping activities

Elements and Performance Criteria

Preparing for housekeeping activities

To be competent, the user/individual on the job must be able to:

- inspect the area while taking into account various surfaces

To be competent, the user/individual on the job must be able to:

- identify the material requirements for cleaning the areas inspected, by considering risk, time, efficiency and type of stain
- ensure that the cleaning equipment is in proper working condition
- select the suitable alternatives for cleaning the areas in case the appropriate equipment and materials are not available and inform the appropriate person
- plan the sequence for cleaning the area to avoid re-soiling clean areas and surfaces
- inform the affected people about the cleaning activity
- display the appropriate signage for the work being conducted
- ensure that there is adequate ventilation for the work being carried out
- wear the personal protective equipment required for the cleaning method and materials being used
- use the correct cleaning method for the work area, type of soiling and surface
- carry out cleaning activity without disturbing others
- deal with accidental damage, if any, caused while carrying out the work
- report to the appropriate person any difficulties in carrying out your work
- identify and report to the appropriate person any additional cleaning required that is outside ones responsibility or skill
- ensure that there is no oily substance on the floor to avoid slippage
- ensure that no scrap material is lying around
- maintain and store housekeeping equipment and supplies
- follow workplace procedures to deal with any accidental damage caused during the cleaning process
- ensure that, on completion of the work, the area is left clean and dry and meets requirements
- return the equipment, materials and personal protective equipment that were used to the right places making sure they are clean, safe and securely stored
- dispose the waste garnered from the activity in an appropriate manner



Qualification Pack

- dispose of used and un-used solutions according to manufacturers instructions, and clean the equipment thoroughly

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** the levels of hygiene required by workplace and why it is important to maintain them during your work
- KU2.** how to inspect a work area to decide what cleaning it needs
- KU3.** methods and materials that used for cleaning variety of surfaces
- KU4.** the types of cleansing agents that are not to be mixed together
- KU5.** the correct method for cleaning equipment and/or machinery used during your work
- KU6.** the importance of personal protective equipment
- KU7.** appropriate personal protective equipment for the work area, cleaning equipment, tools, materials and chemicals used
- KU8.** the correct sequence for cleaning the work area
- KU9.** the time taken by the treatment to work
- KU10.** the importance of following manufacturer's instructions on cleaning agents
- KU11.** the most appropriate place to carry out test cleans and why this should be done before applying treatments
- KU12.** the importance of applying treatments evenly and the effect of not doing this
- KU13.** process of cleaning the surfaces without causing injury or damage
- KU14.** the method to check the treated surface and equipment on completion of cleaning
- KU15.** procedures for reporting any unidentified soiling
- KU16.** procedures for disposing off waste
- KU17.** procedures for disposing off or storing personal protective equipment
- KU18.** escalation procedures for soils or stains that could not be removed

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** construct simple sentences and express ideas clearly through written communication
- GS2.** fill up appropriate technical forms, process charts, activity logs in required format of the company
- GS3.** write simple letters, mails, etc.
- GS4.** perform functional mathematical operations, including apply basic mathematical principles, such as numbers and space, and techniques such as estimation and approximation, for practical purposes
- GS5.** read and understand manuals, health and safety instructions, memos, reports, job cards etc.
- GS6.** read and interpret engineering and tool drawings
- GS7.** express statements, opinions or information clearly so that others can hear and understand



Qualification Pack

- GS8.** respond appropriately to any queries
- GS9.** communicate with supervisor
- GS10.** communicate with upstream and downstream teams
- GS11.** work in a team and other behavioural skills required to support the small group activities (quality circle, cross functional team, suggestion scheme)
- GS12.** practice honesty with respect to company property and time
- GS13.** communicate with people in a form and manner and using language that is open and respectful
- GS14.** resolve any difficulties in relationships with colleagues , or get help from an appropriate person, in a way that preserves goodwill and trust
- GS15.** take responsibility for completing ones own work assignment
- GS16.** take initiative to enhance/learn skills in other areas of work
- GS17.** the capacity to learn from experience in a range of settings and scenarios and the capacity to reflect on and analyse ones learning
- GS18.** is open to new ways of doing things
- GS19.** the capacity to envisage and articulate personal goals; to develop strategies and take action to achieve them
- GS20.** avoid absenteeism
- GS21.** act objectively , rather than impulsively or emotionally when faced with difficult/stressful or emotional situations
- GS22.** work in disciplined factory environment
- GS23.** be punctual



Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Preparing form ousekeepingactivities</i>	1	1	-	-
. inspect the area while taking into account various surfaces	1	1	-	-
	21	27	-	-
. identify the material requirements for cleaning the areas inspected, by considering risk, time, efficiency and type of stain	1	1	-	-
. ensure that the cleaning equipment is in proper working condition	1	1	-	-
. select the suitable alternatives for cleaning the areas in case the appropriate equipment and materials are not available and inform the appropriate person	1	1	-	-
. plan the sequence for cleaning the area to avoid re-soiling clean areas and surfaces	1	1	-	-
. inform the affected people about the cleaning activity	1	1	-	-
. display the appropriate signage for the work being conducted	1	1	-	-
. ensure that there is adequate ventilation for the work being carried out	1	2	-	-
. wear the personal protective equipment required for the cleaning method and materials being used	1	2	-	-
. use the correct cleaning method for the work area, type of soiling and surface	1	1	-	-
. carry out cleaning activity without disturbing others	1	1	-	-
. deal with accidental damage, if any, caused while carrying out the work	1	1	-	-
. report to the appropriate person any difficulties in carrying out your work	1	1	-	-



Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
. identify and report to the appropriate person any additional cleaning required that is outside ones responsibility or skill	1	1	-	-
. ensure that there is no oily substance on the floor to avoid slippage	1	1	-	-
. ensure that no scrap material is lying around	1	1	-	-
. maintain and store housekeeping equipment and supplies	1	3	-	-
. follow workplace procedures to deal with any accidental damage caused during the cleaning process	1	3	-	-
. ensure that, on completion of the work, the area is left clean and dry and meets requirements	1	1	-	-
. return the equipment, materials and personal protective equipment that were used to the right places making sure they are clean, safe and securely stored	1	1	-	-
. dispose the waste garnered from the activity in an appropriate manner	1	1	-	-
. dispose of used and un-used solutions according to manufacturers instructions, and clean the equipment thoroughly	1	1	-	-
NOS Total	22	28	-	-



Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	ISC/N1004
NOS Name	Carry out housekeeping
Sector	Iron & Steel
Sub-Sector	Steel, Sponge Iron, Ferro Alloys, Re-Rollers, Refractory
Occupation	Mechanical Maintenance
NSQF Level	3
Credits	TBD
Version	1.0
Last Reviewed Date	30/12/2014
Next Review Date	01/04/2017
NSQC Clearance Date	18/06/2015



Qualification Pack

ISC/N1005: Carry out reporting and documentation

Description

This unit is about carrying out reporting and documentation

Scope

This unit/task covers the following: Reporting of data/problem/incidents etc. Documentation Information Security

Elements and Performance Criteria

Reporting

To be competent, the user/individual on the job must be able to:

- PC1.** report data/problems/incidents as applicable in a timely manner
- PC2.** report to the appropriate authority as laid down by the company
- PC3.** follow reporting procedures as prescribed by the company

Recording and Documentation

To be competent, the user/individual on the job must be able to:

- PC4.** identify documentation to be completed relating to ones role
- PC5.** record details accurately an appropriate format
- PC6.** complete all documentation within stipulated time according to company procedure
- PC7.** ensure that the final document meets with the requirements of the persons who requested it or make any amendments accordingly
- PC8.** make sure documents are available to all appropriate authorities to inspect

Information Security

To be competent, the user/individual on the job must be able to:

- PC9.** respond to requests for information in an appropriate manner whilst following organizational procedures
- PC10.** inform the appropriate authority of requests for information received

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** different methods of recording information
- KU2.** various documents that need to be maintained
- KU3.** company procedure for filling/maintaining up the documents
- KU4.** procedures for reporting to the appropriate authority
- KU5.** procedures for recording damage, breakages etc.
- KU6.** reporting incidents where standard operating procedures are not followed
- KU7.** the importance of complete and accurate documentation



Qualification Pack

- KU8.** how to maintain complete documentation accurately and within agreed timescales
- KU9.** the importance of ensuring that the documents are correct
- KU10.** the actions to be taken if the documents are not correct
- KU11.** the importance of maintaining the security and confidentiality of recorded information
- KU12.** procedures to maintain confidentiality of information
- KU13.** the appropriate method for responding to requests for information
- KU14.** the reporting procedures to followed before disclosing information to any outside party

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** construct simple sentences and express ideas clearly through written communication
- GS2.** fill up appropriate technical forms, process charts, activity logs in required format of the company
- GS3.** write simple letters, mails, etc.
- GS4.** perform functional mathematical operations, including apply basic mathematical principles, such as numbers and space, and techniques such as estimation and approximation, for practical purposes
- GS5.** read and understand manuals, health and safety instructions, memos, reports, job cards etc
- GS6.** read and interpret engineering and tool drawings
- GS7.** express statements, opinions or information clearly so that others can hear and understand
- GS8.** respond appropriately to any queries
- GS9.** communicate with supervisor
- GS10.** communicate with upstream and downstream teams
- GS11.** work in a team and other behavioural skills required to support the small group activities (quality circle, cross functional team, suggestion scheme)
- GS12.** practice honesty with respect to company property and time
- GS13.** communicate with people in a form and manner and using language that is open and respectful
- GS14.** resolve any difficulties in relationships with colleagues , or get help from an appropriate person, in a way that preserves goodwill and trust
- GS15.** take responsibility for completing ones own work assignment
- GS16.** take initiative to enhance/learn skills in others area of work
- GS17.** the capacity to learn from experience in a range of settings and scenarios and the capacity to reflect on and analyse ones learning
- GS18.** is open to new ways of doing things
- GS19.** the capacity to envisage and articulate personal goals; to develop strategies and take action to achieve them.
- GS20.** avoid absenteeism
- GS21.** act objectively , rather than impulsively or emotionally when faced with difficult/stressful or emotional situations
- GS22.** work in disciplined factory environment



Qualification Pack

GS23. be punctual



Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Reporting</i>	6	9	-	-
PC1. report data/problems/incidents as applicable in a timely manner	2	3	-	-
PC2. report to the appropriate authority as laid down by the company	2	3	-	-
PC3. follow reporting procedures as prescribed by the company	2	3	-	-
<i>Recording and Documentation</i>	10	15	-	-
PC4. identify documentation to be completed relating to ones role	2	3	-	-
PC5. record details accurately an appropriate format	2	3	-	-
PC6. complete all documentation within stipulated time according to company procedure	2	3	-	-
PC7. ensure that the final document meets with the requirements of the persons who requested it or make any amendments accordingly	2	3	-	-
PC8. make sure documents are available to all appropriate authorities to inspect	2	3	-	-
<i>Information Security</i>	4	6	-	-
PC9. respond to requests for information in an appropriate manner whilst following organizational procedures	2	3	-	-
PC10. inform the appropriate authority of requests for information received	2	3	-	-
NOS Total	20	30	-	-



Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	ISC/N1005
NOS Name	Carry out reporting and documentation
Sector	Iron & Steel
Sub-Sector	Steel, Sponge Iron, Ferro Alloys, Re-Rollers, Refractory
Occupation	Mechanical Maintenance
NSQF Level	3
Credits	TBD
Version	1.0
Last Reviewed Date	30/12/2014
Next Review Date	01/04/2017
NSQC Clearance Date	18/06/2015



ISC/N1006: Carry out quality checks

Description

This unit is about carrying out quality control activities

Scope

This unit/task covers the following: Carrying out quality checks to identify problems
Take corrective actions
Reporting the results

Elements and Performance Criteria

Carrying out quality checks to identify problems

To be competent, the user/individual on the job must be able to:

- PC1.** ensure that total range of checks are regularly and consistently performed
- PC2.** relevance and importance of activities and how they contribute to the achievement of the quality objectives,

Take corrective actions

To be competent, the user/individual on the job must be able to:

- PC3.** proper procedure for selecting the material/product and performing quality checks without affecting the material
- PC4.** availability of work instructions, as necessary,
- PC5.** characteristics of the product/material
- PC6.** use of suitable equipment
- PC7.** availability and use of monitoring and measuring devices,
- PC8.** requirements of records

Reporting the results

To be competent, the user/individual on the job must be able to:

- PC9.** importance of maintaining accurate up-to-date records
- PC10.** the need to report within the stipulated time
- PC11.** implications of inaccurate measuring and testing instruments and equipment
- PC12.** the cost of non-conformance to quality standards
- PC13.** implications (impact on internal/external customers) of defective products, materials or components
- PC14.**

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** the importance of quality control procedures
- KU2.** relevance and importance of activities and how they contribute to the achievement of the quality objectives,



Qualification Pack

- KU3.** proper procedure for selecting the material/product and performing quality checks without affecting the material
- KU4.** availability of work instructions, as necessary,
- KU5.** characteristics of the product/material
- KU6.** use of suitable equipment
- KU7.** availability and use of monitoring and measuring devices,
- KU8.** requirements of records
- KU9.** importance of maintaining accurate up-to-date records
- KU10.** the need to report within the stipulated time
- KU11.** implications of inaccurate measuring and testing instruments and equipment
- KU12.** the cost of non-conformance to quality standards
- KU13.** implications (impact on internal/external customers) of defective products, materials or components

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** construct simple sentences and express ideas clearly through written communication
- GS2.** fill up appropriate technical forms, process charts, activity logs in required format of the company
- GS3.** write simple letters, mails, etc.
- GS4.** perform functional mathematical operations, including apply basic mathematical principles, such as numbers and space, and techniques such as estimation and approximation, for practical purposes
- GS5.** read and understand manuals, health and safety instructions, memos, reports, job cards etc
- GS6.** read and interpret engineering and tool drawings
- GS7.** express statements, opinions or information clearly so that others can hear and understand
- GS8.** respond appropriately to any queries
- GS9.** communicate with supervisor
- GS10.** communicate with upstream and downstream teams
- GS11.** work in a team and other behavioural skills required to support the small group activities (quality circle, cross functional team, suggestion scheme)
- GS12.** practice honesty with respect to company property and time
- GS13.** communicate with people in a form and manner and using language that is open and respectful
- GS14.** resolve any difficulties in relationships with colleagues , or get help from an appropriate person, in a way that preserves goodwill and trust
- GS15.** take responsibility for completing ones own work assignment
- GS16.** take initiative to enhance/learn skills in others area of work
- GS17.** the capacity to learn from experience in a range of settings and scenarios and the capacity to reflect on and analyse ones learning
- GS18.** is open to new ways of doing things



Qualification Pack

- GS19.** the capacity to envisage and articulate personal goals; to develop strategies and take action to achieve them.
- GS20.** avoid absenteeism
- GS21.** act objectively , rather than impulsively or emotionally when faced with difficult/stressful or emotional situations
- GS22.** work in disciplined factory environment
- GS23.** be punctual



Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Carrying out quality checks to identify problems</i>	6	10	-	-
PC1. ensure that total range of checks are regularly and consistently performed	3	5	-	-
PC2. relevance and importance of activities and how they contribute to the achievement of the quality objectives,	3	5	-	-
<i>Take corrective actions</i>	34	46	-	-
PC3. proper procedure for selecting the material/product and performing quality checks without affecting the material	5	5	-	-
PC4. availability of work instructions, as necessary,	6	10	-	-
PC5. characteristics of the product/material	6	10	-	-
PC6. use of suitable equipment	6	8	-	-
PC7. availability and use of monitoring and measuring devices,	6	8	-	-
PC8. requirements of records	5	5	-	-
<i>Reporting the results</i>	28	26	-	-
PC9. importance of maintaining accurate up-to-date records	5	5	-	-
PC10. the need to report within the stipulated time	2	3	-	-
PC11. implications of inaccurate measuring and testing instruments and equipment	5	5	-	-
PC12. the cost of non-conformance to quality standards	5	5	-	-
PC13. implications (impact on internal/external customers) of defective products, materials or components	5	5	-	-
PC14.	6	3	-	-



Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
NOS Total	68	82	-	-



Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	ISC/N1006
NOS Name	Carry out quality checks
Sector	Iron & Steel
Sub-Sector	Steel, Sponge Iron, Ferro Alloys, Re-Rollers, Refractory
Occupation	Mechanical Maintenance
NSQF Level	3
Credits	TBD
Version	1.0
Last Reviewed Date	30/12/2014
Next Review Date	01/04/2017
NSQC Clearance Date	18/06/2015



Qualification Pack

ISC/N1007: Carry out problem identification and escalation

Description

This unit is about problem identification and escalation

Scope

This unit/task covers the following: Identify problems across: Materials Products Equipment Others Take corrective action Escalation of unresolved identified problems

Elements and Performance Criteria

Problem Identification

To be competent, the user/individual on the job must be able to:

- PC1.** identify defects/indicators of problems
- PC2.** identify any wrong practices that may lead to problems
- PC3.** identify practices that may impact the final product quality
- PC4.** identify if the problem has occurred before
- PC5.** identify other operations that might be impacted by the problem
- PC6.** ensure that no delays are caused as a result of failure to escalate problems

Necessary Action

To be competent, the user/individual on the job must be able to:

- PC7.** take appropriate materials and sample to conduct tests
- PC8.** evaluate results to confirm suspected reasons for non-conformance (where required)
- PC9.** consider possible reasons for identification of problems
- PC10.** consider applicable corrections and formulate corrective action
- PC11.** formulate action in a timely manner
- PC12.** communicate problem/remedial action to appropriate parties
- PC13.** take corrective action in a timely manner
- PC14.** report/document problem and corrective action in an appropriate manner
- PC15.** monitor corrective action
- PC16.** evaluate implementation of corrective action taken to determine if the problem has been resolved
- PC17.** ensure that corrective action selected is viable and practical
- PC18.** ensure that correct solution is identified to an identified problem
- PC19.** take corrective action for problems identified according to the company procedures
- PC20.** ensure that no delays are caused as a result of failure to take necessary action

Problem Escalation

To be competent, the user/individual on the job must be able to:

- PC21.** escalate problem as per laid down escalation matrix
- PC22.** escalate the problem within stipulated time



Qualification Pack

PC23. escalate the problem in an appropriate manner

PC24. ensure that no delays are caused as a result of failure to escalate problems

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** indicators of problems
- KU2.** the working of the equipment and accessories(if applicable)
- KU3.** the impact of operations on the user and equipment(if applicable)
- KU4.** the impact of operations on the final product (if applicable)
- KU5.** the effect of not rectifying the problems identified
- KU6.** the reason for the occurrence of previous problems
- KU7.** measures and steps that have been taken to address the previous problems
- KU8.** possible solutions for various problems
- KU9.** the correct method for carrying out corrective actions outlined for each problem
- KU10.** the impact of not carrying out the corrective actions
- KU11.** the documentation procedure for recording such problems, as per company norms
- KU12.** the escalation matrix for reporting problems
- KU13.** escalation matrix for reporting unresolved problems
- KU14.** the time frame within which in which each problem needs to be escalated
- KU15.** manner in which each problem needs to be escalated

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** construct simple sentences and express ideas clearly through written communication
- GS2.** fill up appropriate technical forms, process charts, activity logs in required format of the company
- GS3.** write simple letters, mails, etc.
- GS4.** perform functional mathematical operations, including apply basic mathematical principles, such as numbers and space, and techniques such as estimation and approximation, for practical purposes
- GS5.** read and understand manuals, health and safety instructions, memos, reports, job cards etc
- GS6.** read and interpret engineering and tool drawings
- GS7.** express statements, opinions or information clearly so that others can hear and understand
- GS8.** respond appropriately to any queries
- GS9.** communicate with supervisor
- GS10.** communicate with upstream and downstream teams
- GS11.** work in a team and other behavioural skills required to support the small group activities (quality circle, cross functional team, suggestion scheme)



Qualification Pack

- GS12.** practice honesty with respect to company property and time
- GS13.** communicate with people in a form and manner and using language that is open and respectful
- GS14.** resolve any difficulties in relationships with colleagues , or get help from an appropriate person, in a way that preserves goodwill and trust
- GS15.** take responsibility for completing ones own work assignment
- GS16.** take initiative to enhance/learn skills in others area of work
- GS17.** the capacity to learn from experience in a range of settings and scenarios and the capacity to reflect on and analyse ones learning
- GS18.** is open to new ways of doing things
- GS19.** the capacity to envisage and articulate personal goals; to develop strategies and take action to achieve them.
- GS20.** avoid absenteeism
- GS21.** act objectively , rather than impulsively or emotionally when faced with difficult/stressful or emotional situations
- GS22.** work in disciplined factory environment
- GS23.** be punctual



Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Problem Identification</i>	-	16	-	-
PC1. identify defects/indicators of problems	-	3	-	-
PC2. identify any wrong practices that may lead to problems	-	3	-	-
PC3. identify practices that may impact the final product quality	-	3	-	-
PC4. identify if the problem has occurred before	-	2	-	-
PC5. identify other operations that might be impacted by the problem	-	2	-	-
PC6. ensure that no delays are caused as a result of failure to escalate problems	-	3	-	-
<i>Necessary Action</i>	28	38	-	-
PC7. take appropriate materials and sample to conduct tests	2	5	-	-
PC8. evaluate results to confirm suspected reasons for non-conformance (where required)	2	3	-	-
PC9. consider possible reasons for identification of problems	2	2	-	-
PC10. consider applicable corrections and formulate corrective action	2	3	-	-
PC11. formulate action in a timely manner	2	3	-	-
PC12. communicate problem/remedial action to appropriate parties	2	2	-	-
PC13. take corrective action in a timely manner	2	2	-	-
PC14. report/document problem and corrective action in an appropriate manner	2	2	-	-
PC15. monitor corrective action	2	3	-	-



Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC16. evaluate implementation of corrective action taken to determine if the problem has been resolved	2	2	-	-
PC17. ensure that corrective action selected is viable and practical	2	3	-	-
PC18. ensure that correct solution is identified to an identified problem	2	2	-	-
PC19. take corrective action for problems identified according to the company procedures	2	3	-	-
PC20. ensure that no delays are caused as a result of failure to take necessary action	2	3	-	-
<i>Problem Escalation</i>	8	10	-	-
PC21. escalate problem as per laid down escalation matrix	2	2	-	-
PC22. escalate the problem within stipulated time	2	2	-	-
PC23. escalate the problem in an appropriate manner	2	3	-	-
PC24. ensure that no delays are caused as a result of failure to escalate problems	2	3	-	-
NOS Total	36	64	-	-



Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	ISC/N1007
NOS Name	Carry out problem identification and escalation
Sector	Iron & Steel
Sub-Sector	Steel, Sponge Iron, Ferro Alloys, Re-Rollers, Refractory
Occupation	Mechanical Maintenance
NSQF Level	3
Credits	TBD
Version	1.0
Last Reviewed Date	30/12/2014
Next Review Date	01/04/2017
NSQC Clearance Date	18/06/2015



Qualification Pack

Assessment Guidelines and Assessment Weightage

Assessment Guidelines

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Element/ Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each Element/ PC.
2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC.
3. Assessment will be conducted for all compulsory NOS, and where applicable, on the selected elective/option NOS/set of NOS.
4. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below).
5. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/ training center based on these criteria.
6. To pass the Qualification Pack assessment, every trainee should score the Recommended Pass % aggregate for the QP.
7. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack.

Recommended Pass % : 50

Assessment Weightage

Compulsory NOS

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
ISC/N0008.Use basic health and safety practices at the workplace	45	105	-	-	150	15
ISC/N0009.Work effectively with others	30	70	-	-	100	10
ISC/N1001.Prepare for assembling operation	51	99	-	-	150	15
ISC/N1002.Assemble the electrical components	45	105	-	-	150	15



Qualification Pack

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
ISC/N1003.Perform post - assembly activities	27	73	-	-	100	10
ISC/N1004.Carry out housekeeping	22	28	-	-	50	5
ISC/N1005.Carry out reporting and documentation	20	30	-	-	50	5
ISC/N1006.Carry out quality checks	68	82	-	-	150	15
ISC/N1007.Carry out problem identification and escalation	36	64	-	-	100	10
Total	344	656	-	-	1000	100



Qualification Pack

Acronyms

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training
5S	Technique of maintaining orderliness “Japanese terminology.
CP	Control Plan.
WI	Work Instructions.



Qualification Pack

Glossary

Sector	Sector is a conglomeration of different business operations having similar business and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.
Sub-sector	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
Occupation	Occupation is a set of job roles, which perform similar/ related set of functions in an industry.
Job role	Job role defines a unique set of functions that together form a unique employment opportunity in an organisation.
Occupational Standards (OS)	OS specify the standards of performance an individual must achieve when carrying out a function in the workplace, together with the Knowledge and Understanding (KU) they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria (PC)	Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task.
National Occupational Standards (NOS)	NOS are occupational standards which apply uniquely in the Indian context.
Qualifications Pack (QP)	QP comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A QP is assigned a unique qualifications pack code.
Unit Code	Unit code is a unique identifier for an Occupational Standard, which is denoted by an 'N'
Unit Title	Unit title gives a clear overall statement about what the incumbent should be able to do.
Description	Description gives a short summary of the unit content. This would be helpful to anyone searching on a database to verify that this is the appropriate OS they are looking for.
Scope	Scope is a set of statements specifying the range of variables that an individual may have to deal with in carrying out the function which have a critical impact on quality of performance required.



Qualification Pack

Knowledge and Understanding (KU)	Knowledge and Understanding (KU) are statements which together specify the technical, generic, professional and organisational specific knowledge that an individual needs in order to perform to the required standard.
Organisational Context	Organisational context includes the way the organisation is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.
Technical Knowledge	Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Core Skills/ Generic Skills (GS)	Core skills or Generic Skills (GS) are a group of skills that are the key to learning and working in today's world. These skills are typically needed in any work environment in today's world. These skills are typically needed in any work environment. In the context of the OS, these include communication related skills that are applicable to most job roles.
Electives	Electives are NOS/set of NOS that are identified by the sector as contributive to specialization in a job role. There may be multiple electives within a QP for each specialized job role. Trainees must select at least one elective for the successful completion of a QP with Electives.
Options	Options are NOS/set of NOS that are identified by the sector as additional skills. There may be multiple options within a QP. It is not mandatory to select any of the options to complete a QP with Options.