



# Assistant Electrician

QP Code:ISC/Q1001

Version: 2.0

NSQF Level: 3

Indian Iron and Steel Sector Skill Council || Karigari Bhawan 5th Floor, Room No-509  
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## ISC/Q1001: Assistant Electrician

### Brief Job Description

The individual in this role performs installation and assembly of machine/electrical panels and their various components.

### Personal Attributes

The person should be patient, organised, team-oriented and have the ability to work for long hours in adverse conditions. They must be able to plan and prioritise tasks effectively and have an eye for detail and quality.

### Applicable National Occupational Standards (NOS)

#### Compulsory NOS:

1. [ISC/N0008: Use basic health and safety practices at the work place](#)
2. [ISC/N0009: Work effectively with others](#)
3. [ISC/N1001: Prepare for machines/ electrical panels assembling activities](#)
4. [ISC/N1002: Perform assembling of electrical components](#)
5. [ISC/N1003: Perform post - assembly activities](#)

### Qualification Pack (QP) Parameters

<b>Sector</b>	Iron & Steel
<b>Sub-Sector</b>	Steel, Sponge iron, Ferro Alloys, Re-Rollers, Refractory, Foundry
<b>Occupation</b>	Electrical Maintenance
<b>Country</b>	India
<b>NSQF Level</b>	3
<b>Aligned to NCO/ISCO/ISIC Code</b>	NCO-2015/7412.0202
<b>Minimum Educational Qualification &amp; Experience</b>	8th Class Pass with 1 year of relevant experience Or 10th Class Pass OR Level 2 (Iron and Steel - Plant Assistant) with 1 year of relevant experience

Minimum Level of Education for Training in School	
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 Years
Last Reviewed On	NA
Next Review Date	NA
NSQC Approval Date	
Version	2.0

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

### Description

This OS unit is about following safety and adopting sustainable practices for optimising use of resources.

### Scope

The scope covers the following :

- Maintain safe and secure working environment
- Emergencies, rescue and first aid procedures
- Health and hygiene
- Housekeeping and waste management
- Material and energy conservation

### Elements and Performance Criteria

#### *Maintain safe and secure working environment*

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

- PC1. identify hazardous activities and the possible causes of risks or accidents in the workplace
- PC2. follow safe working practices while dealing with hazards to ensure safety of self and others
- PC3. use appropriate protective clothing/equipment for specific tasks and work
- PC4. follow appropriate safety practices while working in and around trenches, elevated places and confined areas
- PC5. lift heavy objects safely using correct procedures
- PC6. carry out routine check of the machine for identifying potential hazards
- PC7. report any identified breaches in health, safety and security policies and procedures to the designated person

#### *Emergencies, rescue and first aid procedures*

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

- PC8. use appropriate type of fire extinguisher
- PC9. apply appropriate rescue techniques during fire hazard
- PC10. provide appropriate first aid procedure to victims wherever required eg.in case of bleeding, burns, choking, electric shock etc.
- PC11. follow emergency procedures such as raising alarm, safe evacuation etc.
- PC12. attend safety training and fire drills to respond promptly during an emergency

#### *Health and hygiene*

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

- PC13. follow regular cleaning and disinfection practices at work place using appropriate techniques and materials

PC14. follow hand hygiene practices at work place using appropriate techniques and materials

PC15. report regarding the contagious illness of self or people in close contact

PC16. avoid contact with ill people and self-isolate in a similar situation

#### *Housekeeping and waste management*

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

PC17. follow the fundamentals of 5S for housekeeping

PC18. ensure good housekeeping in order to prevent hazards and accidents

PC19. store the material, tools and equipment in the correct location and in good condition

PC20. segregate waste into different categories

PC21. identify recyclable, non-recyclable and hazardous waste

PC22. dispose non-recyclable, recyclable and reusable waste appropriately at identified location

#### *Material and energy conservation*

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

PC23. identify ways to optimize usage of material in various tasks/activities/processes

PC24. check for spills/leakages in various tasks/activities/processes

PC25. plug spills/leakages and escalate to appropriate authority if unable to rectify

PC26. check if the equipment/machine is functioning normally before commencing work and rectify wherever required

PC27. ensure electrical equipment and appliances are properly connected and turned off when not in use

### **Knowledge and Understanding (KU)**

The individual on the job needs to know and understand:

KU1. organisation procedures for health, safety and security, individual role and responsibilities in this context

KU2. the organisation's emergency procedures for different emergency situations and the importance of following the same

KU3. evacuation procedures for workers and visitors

KU4. how and when to report hazards

KU5. potential hazards, risks and threats based on the nature of work

KU6. preventative and remedial actions to be taken in case of exposure to toxic material

KU7. various types of fire extinguisher

KU8. various types of safety signs and their meaning

KU9. appropriate first aid treatment relevant to different condition e.g. bleeding, minor burns, eye injuries etc.

KU10. relevant standards, procedures and policies related to 5S followed in the company

KU11. the various materials used and their storage norms

KU12. efficient utilisation of material and water

- KU13. basics of electricity and prevalent energy efficient devices
- KU14. common practices of conserving electricity
- KU15. categorisation of waste into dry, wet, recyclable, non-recyclable and items of single-use plastics
- KU16. usage of different colors of dustbins
- KU17. waste management techniques

### **Generic Skills (GS)**

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

- GS1. read safety instructions/guidelines
- GS2. modify work practices to improve them
- GS3. ask for clarifications from superior about the job requirement
- GS4. work with supervisors/team members to carry out work related tasks
- GS5. complete tasks efficiently and accurately within stipulated time
- GS6. inform/report to concerned person in case of any problem
- GS7. make timely decisions for efficient utilization of resources
- GS8. write reports such as accident report, in at least English/regional language
- GS9. be punctual and utilize time efficiently

**Assessment Criteria**

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Maintain safe and secure working environment</i>	<b>10</b>	<b>14</b>	-	<b>6</b>
PC1. identify hazardous activities and the possible causes of risks or accidents in the workplace	2	2	-	1
PC2. follow safe working practices while dealing with hazards to ensure safety of self and others	2	3	-	1
PC3. use appropriate protective clothing/ equipment for specific tasks and work	1	2	-	1
PC4. follow appropriate safety practices while working in and around trenches, elevated places and confined areas	2	1	-	-
PC5. lift heavy objects safely using correct procedures	1	2	-	1
PC6. carry out routine check of the machine for identifying potential hazards	1	2	-	1
PC7. report any identified breaches in health, safety and security policies and procedures to the designated person	1	2	-	1
<i>Emergencies, rescue and first aid procedures</i>	<b>6</b>	<b>9</b>	-	<b>5</b>
PC8. use appropriate type of fire extinguisher	1	1	-	1
PC9. apply appropriate rescue techniques during fire hazard	1	2	-	1
PC10. provide appropriate first aid procedure to victims wherever required eg. in case of bleeding, burns, choking, electric shock etc.	2	2	-	1
PC11. follow emergency procedures such as raising alarm, safe evacuation etc.	1	2	-	1
PC12. attend safety training and fire drills to respond promptly during an emergency	1	2	-	1
<i>Health and hygiene</i>	<b>2</b>	<b>6</b>	-	<b>2</b>
PC13. follow regular cleaning and disinfection practices at work place using appropriate techniques and materials	1	2	-	1



PC14.follow hand hygiene practices at work place using appropriate techniques and materials	1	2	-	1
PC15.report regarding the contagious illness of self or people in close contact	-	1	-	-
PC16.avoid contact with ill people and self-isolate in a similar situation	-	1	-	-
<i>Housekeeping and waste management</i>	<b>7</b>	<b>12</b>	-	<b>5</b>
PC17.follow the fundamentals of 5S for housekeeping	2	3	-	2
PC18.ensure good housekeeping in order to prevent hazards and accidents	1	2	-	-
PC19.store the material, tools and equipment in the correct location and in good condition	1	2	-	-
PC20.segregate waste into different categories	1	2	-	1
PC21.identify recyclable, non-recyclable and hazardous waste	1	1	-	1
PC22.dispose non-recyclable, recyclable and reusable waste appropriately at identified location	1	2	-	1
<i>Material and energy conservation</i>	<b>5</b>	<b>9</b>	-	<b>2</b>
PC23.identify ways to optimize usage of material in various tasks/activities/processes	1	2	-	-
PC24.check for spills/leakages in various tasks/activities/processes	1	2	-	1
PC25.plugin spills/leakages and escalate to appropriate authority if unable to rectify	1	2	-	1
PC26.check if the equipment/machine is functioning normally before commencing work and rectify wherever required	1	2	-	-
PC27.ensure electrical equipment and appliances are properly connected and turned off when not in use	1	1	-	-
<b>NOS Total</b>	<b>30</b>	<b>50</b>	-	<b>20</b>

## National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	ISC/N0008
<b>NOS Name</b>	Use basic health and safety practices at the work place
<b>Sector</b>	Iron & Steel
<b>Sub-Sector</b>	Generic
<b>Occupation</b>	Generic
<b>NSQF Level</b>	3
<b>Credits</b>	TBD
<b>Version</b>	2.0
<b>Last Reviewed Date</b>	NA
<b>Next Review Date</b>	NA
<b>NSQC Clearance Date</b>	

## ISC/N0009: Work effectively with others

### Description

This OS unit is about communicating with colleagues/superiors and others, either in own work group or in other work groups within organisation.

### Scope

The scope covers the following :

- Communicate effectively with colleagues and others
- Interact with supervisor
- Follow appropriate behaviour at work place

### Elements and Performance Criteria

#### *Communicate effectively with colleagues and others*

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

- PC1. coordinate with colleagues to share work, as per the workload in order to achieve team goals
- PC2. maintain clear communication with colleagues and others, wherever needed, through all means i.e. face-to-face, telephonic or written
- PC3. adjust communication styles to reflect gender and persons with disability (PwD) sensitivity
- PC4. respect all colleagues and co-workers
- PC5. resolve conflicts by communicating with colleagues and other departments

#### *Interact with supervisor*

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

- PC6. identify work requirements by receiving instructions from reporting supervisor
- PC7. escalate problems to supervisors that cannot be handled
- PC8. report the completed work
- PC9. interact with the reporting supervisor about any possible hazards and safety concerns

#### *Follow appropriate behaviour at work place*

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

- PC10. extend help to people with Disability (PwD) at workplace, if required
- PC11. empathize with people with disability
- PC12. adopt a gender neutral behavior
- PC13. adopt responsible and disciplined behaviours at the workplace

### Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1. the importance of effective communication and establishing good working relationships with colleagues and supervisor
- KU2. different methods of communication as per the circumstances
- KU3. importance of teamwork in organization and individual success
- KU4. various components of effective communication
- KU5. barriers to effective communication
- KU6. common reasons for interpersonal conflict
- KU7. what constitutes disciplined behaviour for a working professional
- KU8. gender concepts, issues & legislation
- KU9. organisational policies and procedures related to gender equality
- KU10. challenges faced by PWD and the ways to help them overcome the same

### **Generic Skills (GS)**

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

- GS1. read instructions/guidelines/procedures
- GS2. listen effectively and orally communicate information
- GS3. ask for clarification and advice from the concerned person
- GS4. maintain positive and effective relationships with colleagues
- GS5. evaluate the possible solution(s) to the problem
- GS6. spot and communicate potential areas of disruptions in the work process and report the same
- GS7. complete written work with attention to detail
- GS8. check that the work meets customer requirements

**Assessment Criteria**

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Communicate effectively with colleagues and others</i>	<b>13</b>	<b>20</b>	-	<b>9</b>
PC1. coordinate with colleagues to share work, as per the workload in order to achieve team goals	3	5	-	2
PC2. maintain clear communication with colleagues and others, wherever needed, through all means i.e. face-to-face, telephonic or written	5	7	-	3
PC3. adjust communication styles to reflect gender and persons with disability (PwD) sensitivity	3	4	-	2
PC4. respect all colleagues and co-workers	1	2	-	1
PC5. resolve conflicts by communicating with colleagues and other departments	1	2	-	1
<i>Interact with supervisor</i>	<b>8</b>	<b>14</b>	-	<b>6</b>
PC6. identify work requirements by receiving instructions from reporting supervisor	2	3	-	1
PC7. escalate problems to supervisors that cannot be handled	2	3	-	2
PC8. report the completed work	2	3	-	1
PC9. interact with the reporting supervisor about any possible hazards and safety concerns	2	5	-	2
<i>Follow appropriate behaviour at work place</i>	<b>9</b>	<b>16</b>	-	<b>5</b>
PC10. extend help to people with Disability (PwD) at workplace, if required	2	4	-	2
PC11. empathize with people with disability	2	4	-	1
PC12. adopt a gender neutral behavior	2	4	-	1
PC13. adopt responsible and disciplined behaviours at the workplace	3	4	-	1
<b>NOS Total</b>	<b>30</b>	<b>50</b>	-	<b>20</b>

## National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	ISC/N0009
<b>NOS Name</b>	Work effectively with others
<b>Sector</b>	Iron & Steel
<b>Sub-Sector</b>	Generic
<b>Occupation</b>	Generic
<b>NSQF Level</b>	3
<b>Credits</b>	TBD
<b>Version</b>	2.0
<b>Last Reviewed Date</b>	NA
<b>Next Review Date</b>	NA
<b>NSQC Clearance Date</b>	

## ISC/N1001: Prepare for machines/ electrical panels assembling activities

### Description

This unit is about preparing for the machines/electrical panels assembling work as per the given work instructions and the standards specified by the organisation.

### Scope

This unit/task covers the following:

- Identify work requirements
- Prepare for assembling activities

### Elements and Performance Criteria

#### *Identify work requirements*

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

- PC1. identify the work to be done by interpreting the engineering drawings/blueprints/SOPs
- PC2. identify correct limits, tolerance and fits of equipment by interpreting drawings/blueprints properly
- PC3. report and rectify cases of any inappropriate information in design documents as per organisational procedures
- PC4. identify tools, measuring instruments and equipment required to perform the assembling of Components
- PC5. select and arrange the right tools, measuring instruments and equipment as per the SOP and job requirements

#### *Prepare for assembling activities*

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

- PC6. use appropriate Personal Protective Equipment (PPE) for safe working in workshop
- PC7. plan sequence of activities need to perform for assembling work
- PC8. check the tools, measuring instruments and equipment are cleaned, free from any defects and functioning properly
- PC9. check and calibrate the tools and equipment before use
- PC10. check that machine/electrical panels is cleaned and free from paint, grease, rust, or other contaminants
- PC11. report about damaged / defective components of equipment as per the escalation matrix

### Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1. relevant standards and procedures followed in the company

- KU2. impact of not following defined procedures/ work instructions
- KU3. how to read engineering drawing and sketches of the equipment
- KU4. Standard Operating Procedures (SOP) recommended by OEM for using tools, tackles and equipment (lifting equipment, various sizes of spanner, dial gauge, Vernier calliper, feeler gauge etc.)
- KU5. various electrical machines used in steel plant
- KU6. operation of electrical machines
- KU7. electrical panel and control circuits
- KU8. limits, fits and tolerances
- KU9. normal running characteristics of machines
- KU10. various electrical components such as MCB's, relay, contractor, fuse etc. used in machine, control panels and electrical circuits

### **Generic Skills (GS)**

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

- GS1. read work instructions, equipment manuals and process documents
- GS2. communicate the process requirements to the supervisor and co-workers
- GS3. attentively listen and comprehend the information given by the supervisor/team members
- GS4. write work related information in English/regional language
- GS5. recognise a workplace problem and take suitable action
- GS6. analyse and apply the information gathered from observation, experience, reasoning or communication to act efficiently
- GS7. plan and organise work according to the work requirements
- GS8. complete the assigned tasks with minimum supervision
- GS9. report to the supervisor or deal with a colleague individually, depending on the type of concern



**Assessment Criteria**

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Identify work requirements</i>	<b>17</b>	<b>24</b>	-	<b>12</b>
PC1. identify the work to be done by interpreting the engineering drawings/blueprints/SOPs	2	3		1
PC2. identify correct limits, tolerance and fits of equipment by interpreting drawings/blueprints properly	3	5		2
PC3. report and rectify cases of any inappropriate information in design documents as per organisational procedures	1	2		1
PC4. identify tools, measuring instruments and equipment required to perform the assembling of Components	6	5		4
PC5. select and arrange the right tools, measuring instruments and equipment as per the SOP and job requirements	5	9		4
<i>Prepare for assembling activities</i>	<b>13</b>	<b>26</b>	-	<b>8</b>
PC6. use appropriate Personal Protective Equipment (PPE) for safe working in workshop	1	2		1
PC7. plan sequence of activities need to perform for assembling work	2	3		1
PC8. check the tools, measuring instruments and equipment are cleaned, free from any defects and functioning properly	5	9		3
PC9. check and calibrate the tools and equipment before use	2	5		2
PC10. check that machine/electrical panels is cleaned and free from paint, grease, rust, or other contaminants	2	5		1
PC11. report about damaged / defective components of equipment as per the escalation matrix	1	2		
<b>NOS Total</b>	<b>30</b>	<b>50</b>	-	<b>20</b>

## National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	ISC/N1001
<b>NOS Name</b>	Prepare for machines/ electrical panels assembling activities
<b>Sector</b>	Iron & Steel
<b>Sub-Sector</b>	Steel, Sponge iron, Ferro Alloys, Re-Rollers, Refractory, Foundry
<b>Occupation</b>	Electrical Maintenance
<b>NSQF Level</b>	3
<b>Credits</b>	TBD
<b>Version</b>	2.0
<b>Last Reviewed Date</b>	
<b>Next Review Date</b>	
<b>NSQC Clearance Date</b>	

## ISC/N1002: Perform assembling of electrical components

### Description

This NOS unit is about performing installation and assembling of machine/electrical panels and its various components as per the engineering/ product design.

### Scope

This unit/task covers the following:

- Perform installation of machine/electrical panels and its components
- Perform assembling activities

### Elements and Performance Criteria

#### *Perform installation of machine/electrical panels and its components*

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

- PC1. prepare the foundation base as per the job requirements i.e. cleaning using hand files, scraper, etc.
- PC2. lift the machine/electrical panels manually or by hoist and place the same securely on the designated place as indicated in the drawing/work instructions
- PC3. use braces, jacks, clamps, ropes or bolt straps to hold parts in position
- PC4. prepare control cables, electrical components like MCB's, contactors, relays etc. as per drawing requirement
- PC5. mount, align and level all attachments and fixtures on machine/electrical panels by using hand tools and precision measuring instruments

#### *Perform assembling activities*

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

- PC6. perform assembly operations and assemble all the parts of machine/electrical panels as mentioned in drawing/blueprint
- PC7. use tools such as saws, cutting torches, pipe threaders or benders to cut, thread or bend parts as per the specifications
- PC8. fasten the mechanical components/ subassemblies together by using specified screws, bolts, and collars
- PC9. set and adjust the linkages, tensions and clearances of assembled components to specified specifications by using fixed gauges and hand tools
- PC10. use wires strippers, crippling tool and other insulated tools for making the electrical connections of machine/electrical panels
- PC11. follow the do's and don'ts of the manufacturing process as defined in SOPs/Work Instructions or given by supervisors
- PC12. escalate the problems faced during installation and assembly activities to the supervisor

## Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1. relevant standards and procedures followed in the company
- KU2. how to read engineering drawing and sketches of the equipment
- KU3. Standard Operating Procedures (SOP) recommended by OEM for using tools, tackles and equipment (lifting equipment, various sizes of spanner, dial gauge, Vernier calliper, feeler gauge etc.)
- KU4. various electrical components such as MCB's, relay, contractor, fuse etc. used in machine, control panels and electrical circuits
- KU5. installation and assembling procedure of electrical machines used in steel plant
- KU6. how to prepare foundation for installing the equipment
- KU7. how to install electrical panel and control circuits
- KU8. various assembling operations such as aligning, bending, fixing, mechanical jointing, threaded jointing, sealing and torquing
- KU9. procedure to assemble/ dis-assemble an equipment with a given design
- KU10. normal running characteristics of machines

## Generic Skills (GS)

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

- GS1. read signals, work instructions, equipment manuals and process documents
- GS2. communicate the process requirements to the supervisor and co-workers
- GS3. attentively listen and comprehend the information given by the supervisor/team members
- GS4. write work related information in English/regional language
- GS5. recognise a workplace problem and take suitable action
- GS6. analyse and apply the information gathered from observation, experience, reasoning or communication to act efficiently
- GS7. plan and organise work according to the work requirements
- GS8. complete the assigned tasks with minimum supervision
- GS9. report to the supervisor or deal with a colleague individually, depending on the type of concern

## Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Perform installation of machine/electrical panels and its components</i>	<b>14</b>	<b>23</b>	-	<b>10</b>
PC1. prepare the foundation base as per the job requirements i.e. cleaning using hand files, scraper, etc.	3	5		2
PC2. lift the machine/electrical panels manually or by hoist and place the same securely on the designated place as indicated in the drawing/work instructions	2	4		2
PC3. use braces, jacks, clamps, ropes or bolt straps to hold parts in position	3	4		2
PC4. prepare control cables, electrical components like MCB's, contactors, relays etc. as per drawing requirement	3	4		2
PC5. mount, align and level all attachments and fixtures on machine/electrical panels by using hand tools and precision measuring instruments	3	6		2
<i>Perform assembling activities</i>	<b>16</b>	<b>27</b>		<b>10</b>
PC6. perform assembly operations and assemble all the parts of machine/electrical panels as mentioned in drawing/blueprint	4	6		3
PC7. use tools such as saws, cutting torches, pipe threaders or benders to cut, thread or bend parts as per the specifications	4	6		3
PC8. fasten the mechanical components/ subassemblies together by using specified screws, bolts, and collars	2	4		1
PC9. set and adjust the linkages, tensions and clearances of assembled components to specified specifications by using fixed gauges and hand tools	2	3		2
PC10. use wires strippers, crippling tool and other insulated tools for making the electrical connections of machine/electrical panels	2	4		1
PC11. follow the do's and don'ts of the manufacturing process as defined in SOPs/Work Instructions or given by supervisors	1	2		
<b>NOS Total</b>	<b>30</b>	<b>50</b>	-	<b>20</b>

## National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	ISC/N1002
<b>NOS Name</b>	Perform assembling of electrical components
<b>Sector</b>	Iron & Steel
<b>Sub-Sector</b>	Steel, Sponge iron, Ferro Alloys, Re-Rollers, Refractory, Foundry
<b>Occupation</b>	Electrical Maintenance
<b>NSQF Level</b>	3
<b>Credits</b>	TBD
<b>Version</b>	2.0
<b>Last Reviewed Date</b>	
<b>Next Review Date</b>	
<b>NSQC Clearance Date</b>	

## 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
- Take corrective actions
- Inform to concerned authority about defects and issues

### Elements and Performance Criteria

#### *Conduct tests to ensure fitness of equipment*

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

- PC1. check the machine/electrical panels component as per the control plan, WI for proper working
- PC2. set the test apparatus as per the selected testing process and SOPs/WI
- PC3. connect the machine/electrical panels and its components, various data capturing meters and gauges with the testing apparatus as per SOP/WI
- PC4. conduct functional tests of assembled machine/electrical panels to ensure it performs as per desired performance criteria
- PC5. identify non-conformities and their causes to quality assurance standards
- PC6. record observations/ readings as per the parameters mentioned in the testing manual/Work Instructions
- PC7. observe any deviation, noise or vibrations during the testing process and change or repair the machine/electrical panels components as per the requirement
- PC8. conduct trials of the equipment to ensure that specified parameters are attained with no abnormalities
- PC9. record the test and trial results as per the organisation guidelines
- PC10. suggest and implement the corrective actions to address problems in machine/electric panels
- PC11. record adjustments not covered by established procedures for future reference

#### *Perform post-testing activities*

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

- PC12. add lubricants and coolants into moving parts of machine as per SOP/WI
- PC13. clean and store all the tools, machine and equipment after completion of work
- PC14. dispose scrap or waste material into the disposal area in accordance with the company's policies and environmental regulations
- PC15. report to the supervisor about any problems faced or anticipated during the complete process
- PC16. maintain and update all the records and reports related to assembling activities done as per the organisational guidelines

## Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1. Standard Operating Procedures (SOP) recommended by the manufacturer for using tools and measuring instruments used for quality check and testing process
- KU2. quality and damage checks to be done and importance of the same
- KU3. escalation matrix for reporting identified issues
- KU4. types of documentation in organization and importance of the same
- KU5. records to be maintained and implications of non-maintenance of the same
- KU6. 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)
- KU7. procedures to check adherence to specifications and quality standards using equipment like vernier calliper, screw gauge, etc.
- KU8. the post-assembling processes like cleaning, quality check etc.
- KU9. the various inspection methods for inspecting the quality of equipment/panel
- KU10. SOP recommended by the organisation for checking defects in the electrical equipment/panel
- KU11. impact of non-conformities on final assembly and their causes to quality assurance standards
- KU12. how to conduct trial of the equipment
- KU13. methods of storage and cleaning tools and equipment
- KU14. documentation required regarding assembling activities performed

## Generic Skills (GS)

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

- GS1. read work instructions, equipment manuals and process documents
- GS2. communicate the process requirements to the supervisor and co-workers
- GS3. attentively listen and comprehend the information given by the supervisor/team members
- GS4. write work related information in English/regional language
- GS5. recognise a workplace problem and take suitable action
- GS6. analyse and apply the information gathered from observation, experience, reasoning or communication to act efficiently
- GS7. plan and organise work according to the work requirements
- GS8. complete the assigned tasks with minimum supervision
- GS9. report to the supervisor or deal with a colleague individually, depending on the type of concern



## Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Conduct tests to ensure fitness of equipment</i>	<b>23</b>	<b>38</b>	-	<b>18</b>
PC1. check the machine/electrical panels component as per the control plan, WI for proper working	2	4		2
PC2. set the test apparatus as per the selected testing process and SOPs/WI	2	3		2
PC3. connect the machine/electrical panels and its components, various data capturing meters and gauges with the testing apparatus as per SOP/WI	1	2		1
PC4. conduct functional tests of assembled machine/electrical panels to ensure it performs as per desired performance criteria	4	7		3
PC5. identify non-conformities and their causes to quality assurance standards	2	3		1
PC6. record observations/ readings as per the parameters mentioned in the testing manual/Work Instructions	2	3		1
PC7. observe any deviation, noise or vibrations during the testing process and change or repair the machine/electrical panels components as per the requirement	2	3		2
PC8. conduct trials of the equipment to ensure that specified parameters are attained with no abnormalities	2	4		2
PC9. record the test and trial results as per the organisation guidelines	2	3		1
PC10. suggest and implement the corrective actions to address problems in machine/electric panels	2	3		2
PC11. record adjustments not covered by established procedures for future reference	2	3		1
<i>Perform post-testing activities</i>	<b>7</b>	<b>12</b>		<b>2</b>
PC12. add lubricants and coolants into moving parts of machine as per SOP/WI	2	3		1
PC13. clean and store all the tools, machine and equipment after completion of work	2	3		1

PC14.dispose scrap or waste material into the disposal area in accordance with the company's policies and environmental regulations	1	2		
PC15.report to the supervisor about any problems faced or anticipated during the complete process	1	2		
PC16.maintain and update all the records and reports related to assembling activities done as per the organisational guidelines	1	2		
<b>NOS Total</b>	<b>30</b>	<b>50</b>	<b>-</b>	<b>20</b>

## National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	ISC/N1003
<b>NOS Name</b>	Perform post - assembly activities
<b>Sector</b>	Iron & Steel
<b>Sub-Sector</b>	Steel, Sponge iron, Ferro Alloys, Re-Rollers, Refractory, Foundry
<b>Occupation</b>	Electrical Maintenance
<b>NSQF Level</b>	3
<b>Credits</b>	TBD
<b>Version</b>	2.0
<b>Last Reviewed Date</b>	
<b>Next Review Date</b>	
<b>NSQC Clearance Date</b>	

## Assessment Guidelines and Assessment Weightage

### Assessment Guidelines

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC.
2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC.
3. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below).
4. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/ training center based on these criteria.
5. In case of successfully passing only certain number of NOSs, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack.
6. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack.

**Minimum Aggregate Passing % at QP Level : 70**

### 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 work place	30	50	0	20	100	10
ISC/N0009. Work effectively with others	30	50	0	20	100	10
ISC/N1001. Prepare for machines/ electrical panels assembling activities	30	50	0	20	100	20
ISC/N1002. Perform assembling of electrical components	30	50	0	20	100	30
ISC/N1003. Perform post - assembly activities	30	50	0	20	100	30
<b>Total</b>	<b>150</b>	<b>250</b>	<b>0</b>	<b>100</b>	<b>500</b>	<b>100</b>

## Acronyms

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training

## Glossary

<b>Sector</b>	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.
<b>Sub-sector</b>	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
<b>Occupation</b>	Occupation is a set of job roles, which perform similar/ related set of functions in an industry.
<b>Job role</b>	Job role defines a unique set of functions that together form a unique employment opportunity in an organisation.
<b>Occupational Standards (OS)</b>	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.
<b>Performance Criteria (PC)</b>	Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task.
<b>National Occupational Standards (NOS)</b>	NOS are occupational standards which apply uniquely in the Indian context.
<b>Qualifications Pack (QP)</b>	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.
<b>Unit Code</b>	Unit code is a unique identifier for an Occupational Standard, which is denoted by an 'N'
<b>Unit Title</b>	Unit title gives a clear overall statement about what the incumbent should be able to do.
<b>Description</b>	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.
<b>Scope</b>	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.
<b>Knowledge and Understanding (KU)</b>	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.

<b>Organisational Context</b>	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.
<b>Technical Knowledge</b>	Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
<b>Core Skills/Generic Skills (GS)</b>	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.
<b>Electives</b>	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.
<b>Options</b>	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.