



What are Occupational Standards (OS)?

- OS describe what individuals need to do, know and understand in order to carry out a particular job role or function
- OS are performance standards that individuals must achieve when carrying out functions in the workplace, together with specifications of the underpinning knowledge and understanding



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Introduction

Qualifications Pack - Stoking Car Operator: Ferro Alloys

SECTOR: Iron & Steel

SUB-SECTOR: Ferro Alloys

REFERENCE ID: ISC/Q5302

ALIGNED TO: NCO-2004/NIL

Title of Job: The job is all about inspecting the stoking car is in proper working condition, ensuring runs/drives on the shop floor for stoking the charge and to release the gases between the electrodes without touching the electrodes. It involves covering the arc properly and distribute the charge uniformly. It also involves carrying out basic maintenance of the stoking car.

Personal Attributes: This job requires the candidate to concentrate on the job at hand and complete it without any accidents, so diligence and hardworking is a desired attribute for individuals in this role. The candidate should also be skilled in performing driving and manoeuvring operations with the stoking car. The candidate must be able to follow instructions provided by supervisor. Some of the key attributes includes physical fitness, not having colour blindness , having analytical skills, problem solving attitude, high concentration levels, a sharp reflex and willingness to work in a factory environment.



Job Details	Qualifications Pack Code	ISC/Q5302		
	Job Role	Stoking Car Operator: Ferro Alloys		
	Credits(NSQF)	TBD	Version number	1.0
	Industry	Iron & Steel	Drafted on	29/09/2014
	Sub-sector	Ferro Alloys	Last reviewed on	30/12/2014
	Occupation	Furnace Operation	Next review date	30/12/2015
	NSQC Clearance on	18/06/2015		

Job Role	Stoking Car Operator: Ferro Alloys
Role Description	The role holder inspects that the stoking car is in proper working condition, runs/drives on the shop floor for stoking the charge and to release the gases between the electrodes without touching the electrodes. The role holder is responsible to cover the arc properly and distribute the charge uniformly. The role holder is also responsible for carrying out basic maintenance of the stoking car.
NSQF level	3
Minimum Educational Qualifications	Class X pass Valid Driving License (mandatory)
Maximum Educational Qualifications	ITI pass Valid Driving License (mandatory)
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> • Importance of covering the furnace with Charge mix • Equipment which are carrying currents and precautions while operating the car • Must have valid driving license • 5S and safety practices • Hazards associated with working at heights, confined spaces & high temperatures
Minimum Job Entry Age	18 years
Experience	<ul style="list-style-type: none"> • 0 to 1 year experience in similar function • In lieu of minimum qualification the incumbent should have minimum 4 to 5 years working experience in driving



	medium/heavy vehicles
Occupational Standards (OS)	<p>Compulsory:</p> <p>ISC/N5305: Prepare the stoking car ISC/N5306: Perform operations with the stoking car ISC/N5307: Perform basic maintenance and troubleshooting of the stoking car ISC/N0008: Use basic health and safety practices at the workplace ISC/N0009: Works effectively with others</p> <p>Optional:</p> <p>N/A</p>
Performance Criteria	As described in the relevant NOS units



Definitions

Keywords /Terms	Description
Core Skills/Generic Skills	Core Skills or Generic Skills are a group of skills that are key to learning and working in today's world. These skills are typically needed in any work environment. In the context of the NOS, these include communication related skills that are applicable to most job roles.
Function	Function is an activity necessary for achieving the key purpose of the sector, occupation, or area of work, which can be carried out by a person or a group of persons. Functions are identified through functional analysis and form the basis of NOS.
Job role	Job role defines a unique set of functions that together form a unique employment opportunity in an organization.
Knowledge and Understanding	Knowledge and Understanding are statements which together specify the technical, generic, professional and organizational specific knowledge that an individual needs in order to perform to the required standard.
National Occupational Standards (NOS)	NOS are Occupational Standards which apply uniquely in the Indian context
Occupation	Occupation is a set of job roles, which perform similar/related set of functions in an industry.
Organisational Context	Organisational Context includes the way the organization is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.
Performance Criteria	Performance Criteria are statements that together specify the standard of performance required when carrying out a task.
Qualifications Pack(QP)	Qualifications Pack comprises the set of NOS, together with the educational, training and other criteria required to perform a job role. A Qualifications Pack is assigned a unique qualification pack code.
Qualifications Pack Code	Qualifications Pack Code is a unique reference code that identifies a qualifications pack.
Scope	Scope is the 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 the quality of performance required.
Sector	Sector is a conglomeration of different business operations having similar businesses 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.
Sub-functions	Sub-functions are sub-activities essential to fulfil the achieving the objectives of the function.
Technical Knowledge	Technical Knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Unit Code	Unit Code is a unique identifier for a NOS unit, which can be denoted with an 'N'
Unit Title	Unit Title gives a clear overall statement about what the incumbent should be able to do.
Vertical	Vertical may exist within a sub-sector representing different domain areas or the client industries served by the industry.
Keywords /Terms	Description
NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
OEM	Original Equipment Manufacturer
OS	Occupational Standard(s)
QP	Qualifications Pack
5 S	Technique of maintaining orderliness –Japanese terminology
CP	Control Plan
WI	Work Instructions

Acronyms



ISC/N5305: Prepare the stoking car



Overview

This unit is about preparing the Stoking car for activities that need to be carried out during a shift



Unit Code	ISC/N5305
Unit Title (Task)	Prepare the stoking car
Description	This unit is about preparing the stoking car (Forklift) for activities that need to be carried out during a shift.
Scope	This OS unit/task covers the following: <ul style="list-style-type: none"> Understand the job requirement where very high currents are passing through electrodes Conduct pre-operation checks to ensure the car is safe to use
Performance Criteria (PC) w.r.t. the Scope	
Element	Performance Criteria
Understand the job requirements	To be competent, the user/individual on the job must be able to: <p>PC1. Interpret the checklist and understand the job requirements</p> <p>PC2. Ensure the floor is clean and no obstructions before starting the job</p> <p>PC3. Operating the car near the Electrodes which carry very high currents</p> <p>PC4. Importance of covering the electric arc with charge mix</p>
Conduct pre-operation checks to ensure the car is safe to use	To be competent, the user/individual on the job must be able to: <p>PC5. Check oil levels of engine, transmission, radiator coolant and brake</p> <p>PC6. Check differential and hydraulic oil levels</p> <p>PC7. Check the hydraulic hose and ram for leakages</p> <p>PC8. Check condition of parking brake, main horn, reverse horn, and head light.</p> <p>PC9. Check the various controls, gauges, warning lamp and other safety devices</p> <p>PC10. Check fan belt tension, electrolyte level and terminal tightness</p> <p>PC11. Check and adjust driving position, rear and side mirrors, seat belts</p> <p>PC12. Clean air filter dust bowls</p> <p>PC13. Check coolant and oil in engine</p> <p>PC14. Keep footplates and steps clean and free from mud, dirt and oil</p> <p>PC15. Report defects precisely to the supervisor if beyond scope of his role</p>
Element	Knowledge and Understanding
A. Organisational Context (Knowledge of the Company/ Organisation and its processes)	The user/individual on the job needs to know and understand: <p>KA1. Job specific documents e.g. daily maintenance checklist and importance of the same</p> <p>KA2. Safety policy of the company</p> <p>KA3. Emergency preparedness of the specific work site</p> <p>KA4. Risk and impact of not following defined procedures/work instructions</p> <p>KA5. Escalation matrix for reporting identified problems</p>
B. Technical	The user/individual on the job needs to know and understand:

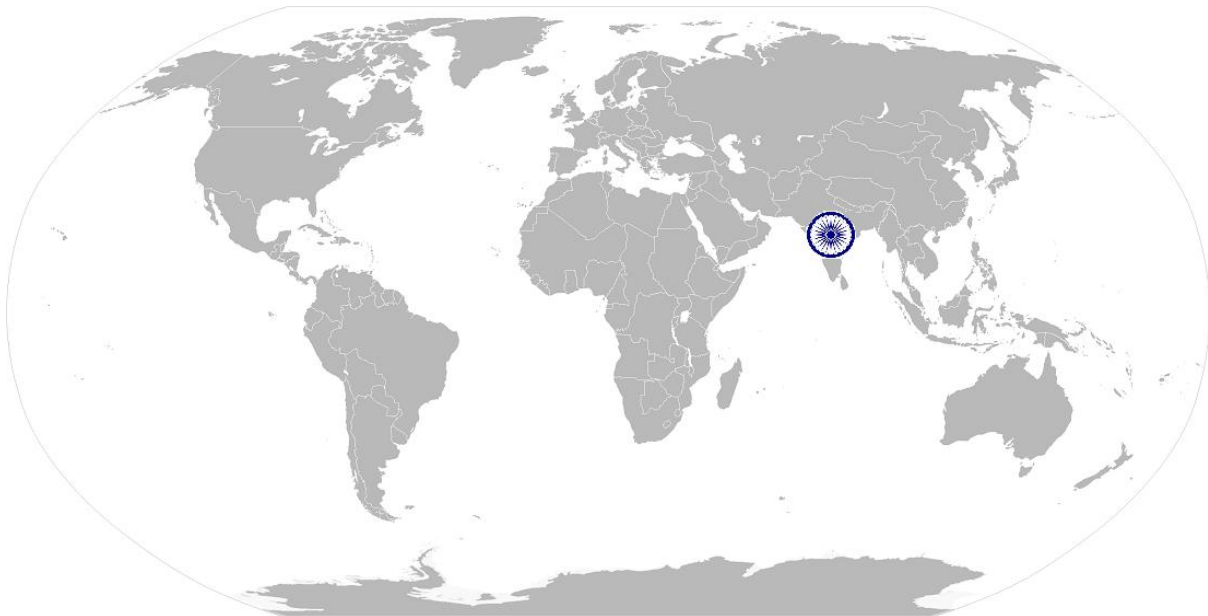


Knowledge	<p>KB1. Different parts of the stoking car (forklift) and their specific functions</p> <p>KB2. Introduction to diesel and petrol engines, their sub-components and function</p> <p>KB3. Different gears and their power transmission mechanism</p> <p>KB4. Different types of steering mechanisms</p> <p>KB5. Functioning of hydraulic systems</p> <p>KB6. Service brakes and parking brakes</p> <p>KB7. Instrument panel, their location and operation</p>
Skills (S) w.r.t. the scope	
Element	Skills
A. Core Skills/ Generic Skills	Writing skills and reading Skills
	<p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. Read equipment manuals and process documents given by the equipment supplier to understand the equipment and processes better</p> <p>SA2. Make notes on any deviation from desirable specifications of stoking car (forklift) to inform supervisor or maintenance department, as required in English, Hindi and Local Language (E/H/LL)</p>
	Oral Communication (Listening and Speaking skills)
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SA3. Effectively explain supervisors, operators and helpers about equipment operations, process steps and other operational requirements</p> <p>SA4. Answer the queries raised by the operative team as well as intercompany departments</p> <p>SA5. Discuss task lists, schedules, and work-loads with team members</p>
B. Professional Skills	Time Management
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB1. Prioritize and execute tasks within the scheduled time limits</p>
	Fault Diagnostic and Maintenance
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB2. Check for damage in stoking car components e.g. engine components, tracks, hydraulic ram, brakes, horn etc.</p> <p>SB3. Conduct maintenance tasks e.g. checking and topping up engine oil levels.</p>



NOS Version Control

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Occupation	Furnace Operation	Next review date	30/12/2015





ISC/N5306: Perform operations with the stoking car



Overview

This unit is about performing operations on the Stoking car (forklift) to cover the furnace with Charge mix without touching the electrodes



Unit Code	ISC/N5306
Unit Title (Task)	Perform operations with the stoking car
Description	This unit is about performing operations on the Stoking car (forklift) to cover the furnace with Charge mix without touching the electrodes.
Scope	This OS unit/task covers the following: <ul style="list-style-type: none"> • Start and Operate the stoking car • Drives safely on the approved route • Covering the furnace with Charge mix in correct way at the desired location between the electrodes without touching them
Performance Criteria (PC) w.r.t. the Scope	
Element	Performance Criteria
Start and Operate the Stoking car	To be competent, the user/individual on the job must be able to: <p>PC1. Start the engine using the pushbutton switch and key switch together</p> <p>PC2. Ensure that the stoking car stoker's movement is smooth</p> <p>PC3. Ensure that the furnace is covered with the charge mix between the electrodes and centre of the electrodes</p> <p>PC4. Take fresh charge wherever required in consultation with the supervisor</p>
Drives the stoking car safely on the approved route	To be competent, the user/individual on the job must be able to: <p>PC5. Ensure wearing safety belt while driving</p> <p>PC6. Ensure proper functioning of rear view camera and audio visual alarm</p> <p>PC7. Not use mobile phones while driving</p> <p>PC8. Look out for people moving on shop floor</p> <p>PC9. Operate the car forward and backwards carefully on the shop floor</p> <p>PC10. Operate car without touching the electrodes or its critical parts</p> <p>PC11. Ensure stoking car load and operating speed is within limits specified by the manufacturer</p> <p>PC12. Keep a safe distance from a tip edge and use an approved stop block before tipping over an edge</p>
Discharging the load in correct way at the desired location	To be competent, the user/individual on the job must be able to: <p>PC13. Select and use the right type of brake in different situations and conditions</p> <p>PC14. Ensure that stoking car is always parked on firm, level ground; with handbrake applied and drive and controls disengaged</p> <p>PC15. Operate the stoker safely at the position and in the manner designated</p> <p>PC16. Ensure that no other operators travel on or stand near the stoking car</p> <p>PC17. Ensure proper distribution of Charge mix in the furnace and always covered fully</p>



Element	Knowledge and Understanding
A. Organisational Context (Knowledge of the Company/ Organisation and its processes)	The user/individual on the job needs to know and understand: KA1. Job specific documents e.g. daily maintenance checklist and importance of the same KA2. Safety policy of the company KA3. Emergency preparedness of the specific work site KA4. Risk and impact of not following defined procedures/work instructions KA5. Escalation matrix for reporting identified problems KA6. Implications of delays in process to the company
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. Different types of heavy earth moving machines (H.E.M.M) and their use KB2. Introduction to diesel and petrol engines, their sub-components and function KB3. Different gears and their power transmission mechanism KB4. Different types of steering mechanisms KB5. Functioning of hydraulic systems in stoking car KB6. Service brakes and parking brakes KB7. Instrument panel, their location and operation KB8. Controls, levers and switches in order to operate the stoking car properly KB9. General safety rules
Skills (S) w.r.t. the scope	
Element	Skills
A. Core Skills/ Generic Skills	Writing skills and reading Skills The user/ individual on the job needs to know and understand how to: SA1. Read & understand all displays and aware of the standard safety symbols SA2. Able to construct simple sentence & write technical observations, memos & requisitions in English SA3. Read equipment manuals and process documents given by the equipment supplier to understand the equipment and processes better
	Oral Communication (Listening and Speaking skills) The user/individual on the job needs to know and understand how to: SA4. Communicate with supervisors/juniors/colleagues/casual workers in English/Hindi/Local language SA5. Respond objectively & orally to questions asked of him in E/H/LL SA6. discuss task lists, schedules, and work-loads with the team members
	Integrity The user/individual on the job needs to know and understand how to: SA10. Maintain integrity with respect to company property and time

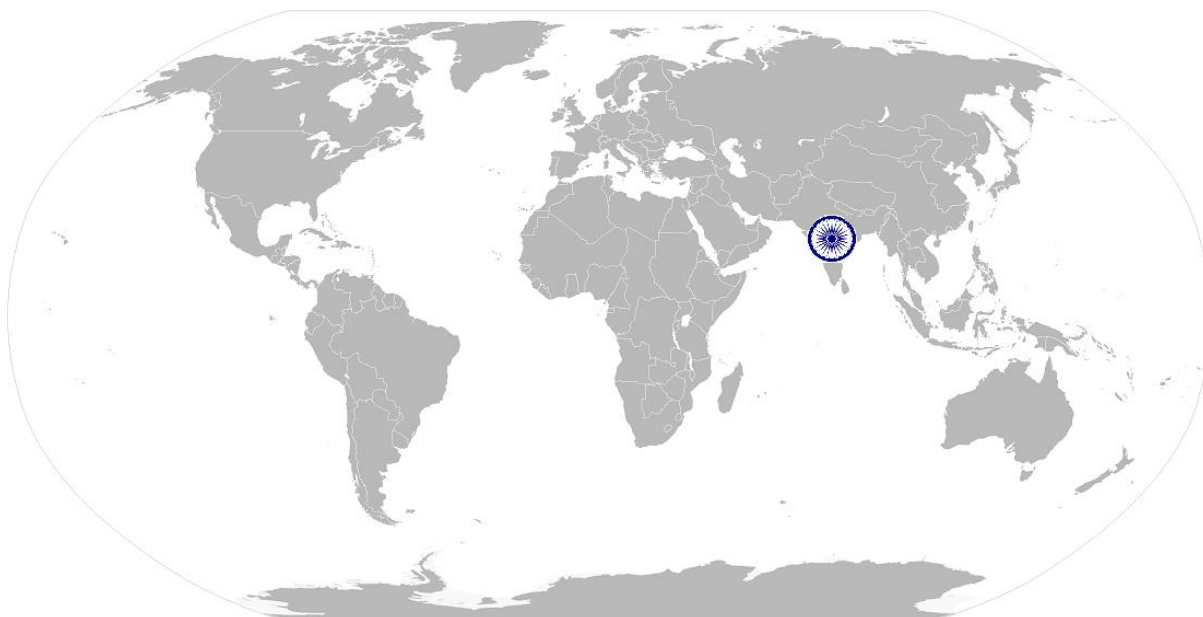


	SA11. Communicate with people in a polite manner using respectful language SA12. Resolve difficulties in relationships with colleagues amicably
	Motivation
	The user/individual on the job needs to know and understand how to: SA13. Take responsibility for completing one's own work assignment SA14. Take initiative to enhance/learn skills in one's area of work SA15. Reflect and act upon one's learning from experience
B. Professional Skills	Time Management
	The user/individual on the job needs to know and understand how to: SB1. Prioritize and execute tasks within the scheduled time limits
	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB2. Suggest methods to avoid accidents/errors while operating stoking car SB3. Identify possible ways to improve operational efficiency
	Reliability
	The user/individual on the job needs to know and understand how to: SB4. Avoid absenteeism and maintain quality of work SB5. Work in a disciplined environment and adhere to working norms of the organisation SB6. Be punctual and adhere to timelines
	Operations
	The user/individual on the job needs to know and understand how to: SB7. Perform driving operations such as forward, reverse, 'U' turn, tight spot maneuvering, etc. SB8. Select and use the correct combination of levers to operate the stoking car SB9. Maneuver the blade and rear attachments to achieve various tasks



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Occupation	Furnace Operation	Next review date	30/12/2015





ISC/N5307: Perform basic maintenance and troubleshooting of the stoking car



National Occupational Standards

Overview

This unit is about performing routine maintenance and troubleshooting on the stoking car



Unit Code	ISC/N5307
Unit Title (Task)	Performing routine maintenance and troubleshooting of the stoking car
Description	This unit is about performing routine maintenance and troubleshooting tasks on the Stoking Car.
Scope	<p>This OS unit/task covers the following:</p> <ul style="list-style-type: none"> • Routine maintenance in accordance with the manufacturer’s recommendations and company procedures • Basic diagnostics and Troubleshooting
Performance Criteria (PC) w.r.t. the Scope	
Element	Performance Criteria
Routine maintenance in accordance with the manufacturer’s recommendations and company procedures	<p>To be a competent, the user/individual on the job must be able to:</p> <p>PC1. Track machine operating hours to assess the right service schedule PC2. Clean air filter dust bowls PC3. Clean footplates, pedals and steps free from mud/dirt PC4. Drain water and sediment /fuel separators PC5. Replenish coolants, lubricants and fluids PC6. Grease all greasing pins and pivot points PC7. Check battery levels and condition of the terminals and carrying out minor adjustments if required PC8. Check and maintain the tyre rims, air pressure, wheel nuts and treads PC9. Ensure the machine is on firm and level ground before attempting to carry out any maintenance activity PC10. Ensure the locking bar is in position to prevent the front and rear chassis moving and creating a crushing zone (articulated machines only) PC11. Ensure that no maintenance task on the engine is performed when running or still hot</p>
Basic diagnostics and Troubleshooting	<p>To be a competent, the user/individual on the job must be able to:</p> <p>PC12. Identify any problem with the usual functioning of the Stoking Car PC13. Carry out troubleshooting to ensure completion of given task PC14. Assess when the problem is beyond his competence and report the problem to suitably qualified and competent personnel</p>
Element	Knowledge and Understanding
A. Organisational Context (Knowledge of the Company/	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. Types of documentation in organization e.g. daily maintenance checklist and importance of the same KA2. Risk and impact of not following defined procedures/work instructions</p>

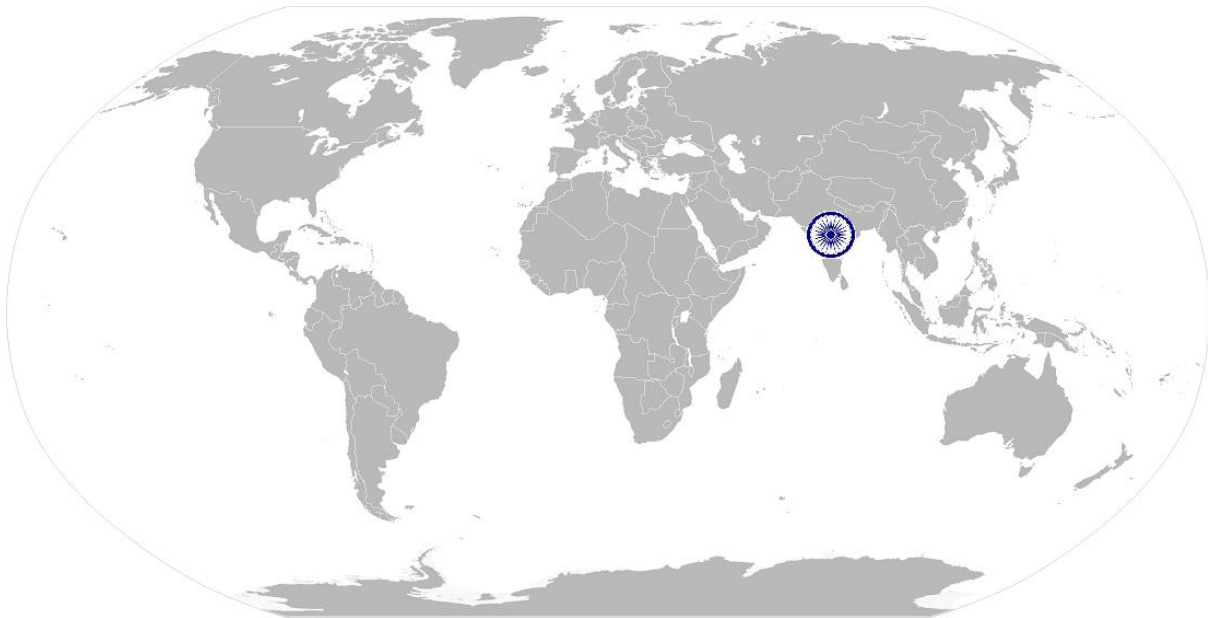


Organisation and its processes)	KA3. Rules and regulations of steel plant as per standard operating procedure (SOP) KA4. Risk and impact of not following company's SOP KA5. Escalation matrix for reporting identified problems
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. Controls and switches needed to operate the Stoking Car properly KB2. Basic physics and mechanics involved in various functions of the stoking car KB3. Response to emergencies e.g. fire KB4. Detection of faults in running engine KB5. Need for lubrication and its proper way and knowledge of all points where it is required
Skills (S) w.r.t. the scope	
Element	Skills
A. Core Skills/ Generic Skills	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to: SA1. Communicate with supervisors/juniors/colleagues/casual workers in English/Hindi/Local language SA2. Respond objectively & orally to questions asked of him in E/H/LL SA3. discuss task lists, schedules, and work-loads with the team members
B. Professional Skills	Time Management
	The user/individual on the job needs to know and understand how to: SB1. Prioritize and execute tasks within the scheduled time limits SB2. Carry out all maintenance work in the given time limit and focus on critical activities first
	Reliability
	The user/individual on the job needs to know and understand how to: SB3. Avoid absenteeism and maintain quality of work SB4. Work in a disciplined environment and adhere to working norms of the organisation SB5. Be punctual and adhere to timelines



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

National Occupational Standards



Overview

This unit covers health, safety and security at the workplace. This includes procedures and practices that candidates need to follow to help maintain a healthy, safe and secure work environment.



Unit Code	ISC/N0008
Unit Title (Task)	Use basic health and safety practices at the work place
Description	<p>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.</p> <p>It includes understanding of risks and hazards in the workplace, along with common techniques to minimize risk, deal with accidents, emergencies, etc.</p>
Scope	<p>This unit/task covers the following:</p> <ul style="list-style-type: none"> • Health and safety procedures • Fire safety procedures • Emergencies, rescue and first aid procedures
Performance Criteria (PC) w.r.t. the Scope	
Element	Performance Criteria
Health and safety procedures	<p>The user/individual on the job should be able to:</p> <p>PC1. Use protective clothing/equipment for specific tasks and work conditions</p> <p>Protective clothing includes:</p> <ul style="list-style-type: none"> • 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 <p>Equipment includes:</p> <ul style="list-style-type: none"> • Hand shields • Machine guards • Residual current devices • Shields • Dust sheets • Respirator <p>PC2. State the name and location of people responsible for health and safety in the workplace</p>

Various areas are listed below:

- On chemical containers
- Equipment
- Packages
- Inside buildings
- Open areas, public places 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.

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

	<p>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</p> <p>Faults :</p> <ul style="list-style-type: none"> • Corrosion of metal components • Deterioration • Splits and cracks timber components • Imbalance • Loose rungs • Nuts or bolts, etc. <p>Set up:</p> <ul style="list-style-type: none"> • Firm/level base • Clip/lash down • Leaning at the correct angle, etc. <p>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:</p> <ul style="list-style-type: none"> • Clean/tidy work areas • Removal/disposal of waste products • Protect surfaces <p>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</p>
<p>Fire safety procedures</p>	<p>The user/individual on the job should be able to:</p> <p>PC13. Use the various appropriate fire extinguishers on different types of fires correctly.</p> <p>Fire extinguishers:</p> <ul style="list-style-type: none"> • Sand • Water • Foam • Co2 • Dry powder <p>Fires:</p> <ul style="list-style-type: none"> • 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) <p>Causes of fires:</p> <ul style="list-style-type: none"> • Heating of metal



	<ul style="list-style-type: none"> • Spontaneous ignition • Sparking, • Electrical heating • Loose fires (e.g. Smoking, welding, etc.) • Chemical fires, etc. <p>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</p>
<p>Emergencies, rescue and first-aid procedures</p>	<p>The user/individual on the job should be able to:</p> <p>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 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 :</p> <ul style="list-style-type: none"> • Fire extinguishers • First aid equipment • Safety instruments and clothing • Safety installations, e.g. Fire exits, exhaust fans etc. <p>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:</p> <ul style="list-style-type: none"> • Raising alarm • Safe/efficient evacuation • Correct means of escape • Correct assembly point • Roll call • Correct return to work <p>PC25. Complete a written accident/incident report or dictate a report to another person, and send report to person responsible Incident Report should capture:</p> <ul style="list-style-type: none"> • Name • Date/time of incident • Date/time of report, • Location • Environment conditions • Persons involved • Sequence of events • Injuries sustained • Damage sustained • Actions taken • Witnesses

	<ul style="list-style-type: none"> Supervisor/manager notified <p>Documents:</p> <ul style="list-style-type: none"> Fire notices Accident reports Safety instructions for equipment and procedures Company notices and documents Legal documents (e.g. Government notices) <p>Job titles:</p> <ul style="list-style-type: none"> Health and safety officer First aid officer Fire officer <p>PC26. Demonstrate correct method to move injured people and others during an emergency</p>
Element	Knowledge and Understanding
A. Organisational Context (Knowledge of the Company/Organisation and its processes)	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. State the names (and job titles if applicable), and describe where to find, all the people responsible for health and safety in a workplace</p> <p>KA2. State the names and location of documents that refer to health and safety in the workplace</p>
B. Technical Knowledge	<p>The user/individual on the job needs to know and understand:</p> <p>KB3. Meaning of “hazards” and “risks”</p> <p>KB4. Health and safety hazards commonly present in the work environment and related precautions</p> <p>KB5. Possible causes of risk, hazard or accident in the workplace and why risk and/or accidents are possible</p> <p>KB6. Activities and causes of risk and accident</p> <p>KB7. Methods of accident prevention</p> <p>KB8. Safe working practices when working with tools and machines</p> <p>KB9. Safe working practices while working at various hazardous sites</p> <p>KB10. Where to find all the general health and safety equipment in the workplace</p> <p>KB11. Various dangers associated with the use of electrical equipment</p> <p>KB12. Preventative and remedial actions to be taken in the case of exposure to toxic materials</p> <ul style="list-style-type: none"> 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 <p>KB13. Importance of using protective clothing/equipment while working</p> <p>KB14. Precautionary activities to prevent the fire accident</p> <p>Activities and causes:</p> <ul style="list-style-type: none"> Physical actions Reading Listening to and giving instructions



	<ul style="list-style-type: none"> • Inattention • Sickness and incapacity (e.g. Drunkenness) • Health hazards (e.g. Untreated injuries and contagious illness) <p>KB15. Various causes of fire KB16. Techniques of using the different fire extinguishers KB17. Different methods of extinguishing fire KB18. Rescue techniques applied during a fire hazard KB19. Various types of safety signs and what they mean KB20. Appropriate basic first aid treatment relevant to the condition e.g. Shock, electrical shock, bleeding, breaks to bones, minor burns, resuscitation, poisoning, eye injuries KB21. Content of written accident report KB22. Potential injuries and ill health associated with incorrect manual handling KB23. Safe lifting and carrying practices KB24. Personal safety, health and dignity issues relating to the movement of a person by others KB25. Potential impact to a person who is moved incorrectly</p>
Skills (S) w.r.t. the scope	
Element	Skills
A. Core Skills/ Generic Skills	Reading and Writing Skills
	The user/individual on the job needs to know and understand how to:
	SA1. Read and comprehend basic content to read labels, charts, signage's SA2. Read and comprehend basic English to read manuals of operations SA3. Read and write an accident/incident report in local language or English
	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to:
	SA4. Question co-workers appropriately in order to clarify instructions and other issues SA5. Give clear instructions to co-workers, subordinates others
	Decision Making
	The user/individual on the job needs to know and understand how to:
	SA6. 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
	B. Professional Skills
	Plan and Organize
	The user/individual on the job needs to know and understand:
	SB1. Plan and organize their own work schedule, work area, tools, equipment and materials to maintain decorum and for improved productivity



	Working with others
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB2. Remain congenial while discussing and debating issues with co-workers SB3. Follow appropriate protocols for communication based on situation, hierarchy, organizational culture and practice SB4. Ask for, provide and receive required assistance where possible to ensure achievement of work related objectives SB5. Thank co-workers for any assistance received SB6. Offer appropriate respect based on mutuality and respect for fellow workmanship and authority</p>
	Problem Solving
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB7. Think through the problem, evaluate the possible solution(s) and suggest an optimum /best possible solution(s) SB8. Identify immediate or temporary solutions to resolve delays SB9. Identify sources of support that can be availed of for problem solving for various kind of problems SB10. Seek appropriate assistance from other sources to resolve problems SB11. Report problems that you cannot resolve to appropriate authority</p>
	Analytical Thinking
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB12. Identify cause and effect relations in their area of work SB13. Use cause and effect relations to anticipate potential problems and their solution</p>



NOS Version Control

NOS Code	ISC/N0008		
Credits(NSQF)	TBD	Version number	1.0
Industry	Iron and steel	Drafted on	23/07/2014
Industry Sub-sector	All departments	Last reviewed on	30/12/2014
Occupation	Furnace Operation	Next review date	30/12/2015



ISC/N0009: Works effectively with others

National Occupational Standards

A world map showing the continents in light gray. India is highlighted in a darker shade of gray, and a small Indian national flag is placed over the country.

Overview

This unit covers basic practices that improve effectiveness of working with others in an organisational set-up.



Unit Code	ISC/N0009
Unit Title (Task)	Works 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: <ul style="list-style-type: none"> Ensure appropriate communication with superiors, peers and others as applicable at work place Demonstrate appropriate behaviour and etiquette at work place
Performance Criteria (PC) w.r.t. the Scope	
Element	Performance Criteria
Ensure appropriate communication with superiors, peers and others as applicable at work place	The user/individual on the job should be able to: <p>PC1. Accurately receive information and instructions from the supervisor and fellow workers, getting clarification where required</p> <p>PC2. Accurately pass on information to authorized persons who require it and within agreed timescale and confirm its receipt</p> <p>PC3. Provide information to others clearly, at a pace and in a manner that helps them to understand</p>
Demonstrate appropriate behaviour and etiquette at work place	The user/individual on the job should be able to: <p>PC4. Display helpful behaviour by assisting others in performing tasks in a positive manner, where required and possible</p> <p>PC5. Consult with and assist others to maximize effectiveness and efficiency in carrying out tasks</p> <p>PC6. Display appropriate communication etiquette while working</p> <p>PC7. Display active listening skills while interacting with others at work</p> <p>PC8. Use appropriate tone, pitch and language to convey politeness, assertiveness, care and professionalism</p> <p>PC9. Demonstrate responsible and disciplined behaviours at the workplace</p> <p>PC10. Escalate grievances and problems to</p>
Element	Knowledge and Understanding
A. Organisational Context (Knowledge of the Company/ Organisation and its processes)	The user/individual on the job needs to know and understand: <p>KA1. Legislation, standards, policies, and procedures followed in the company relevant to own employment and performance conditions</p> <p>KA2. Reporting structure, inter-dependent functions, lines and procedures in the work area</p> <p>KA3. Relevant people and their responsibilities within the work area</p> <p>KA4. Escalation matrix and procedures for reporting work and employment related issues</p>



<p>B. Technical Knowledge</p>	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. Various categories of people that one is required to communicate and co-ordinate with in the organization KB2. Importance of effective communication in the workplace KB3. Importance of teamwork in organizational and individual success KB4. Various components of effective communication KB5. Key elements of active listening KB6. Value and importance of active listening and assertive communication KB7. Barriers to effective communication KB8. Importance of tone and pitch in effective communication KB9. Importance of avoiding casual expletives and unpleasant terms while communicating professional circles KB10. How poor communication practices can disturb people, environment and cause problems for the employee, the employer and the customer KB11. Importance of ethics for professional success KB12. Importance of discipline for professional success KB13. What constitutes disciplined behaviour for a working professional KB14. Common reasons for interpersonal conflict KB15. Importance of developing effective working relationships for professional success KB16. Expressing and addressing grievances appropriately and effectively KB17. Importance and ways of managing interpersonal conflict effectively</p>
<p>Skills (S) w.r.t. the scope</p>	
<p>Element</p>	<p>Skills</p>
<p>A. Core Skills/ Generic Skills</p>	<p>Reading and Writing Skills</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SA1. Read and comprehend basic content to read labels, charts, signage's SA2. Read and comprehend basic English to read manuals of operations SA3. Read and write an accident/incident report in local language or English</p> <p>Oral Communication (Listening and Speaking skills)</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SA4. Question co-workers appropriately in order to clarify instructions and other issues SA5. Provide clear instructions to co-workers, subordinates others</p> <p>Decision Making</p>
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SA6. Make appropriate decisions pertaining to the concerned area of work with respect to intended work objective, span of authority, responsibility, laid down</p>



	procedure and guidelines
B. Professional Skills	Plan and Organize
	The user/individual on the job needs to know and understand: SB1. Plan and organize their own work schedule, work area, tools, equipment and materials to maintain decorum and for improved productivity
	Working with others
	The user/individual on the job needs to know and understand how to: SB2. Remain congenial while discussing and debating issues with co-workers SB3. Follow appropriate protocols for communication based on situation, hierarchy, organizational culture and practice SB4. Ask for, provide and receive required assistance where possible to ensure achievement of work related objectives SB5. Thank co-workers for any assistance received SB6. Offer appropriate respect based on mutuality and respect for fellow workmanship and authority
	Problem Solving
	The user/individual on the job needs to know and understand how to: SB7. Think through the problem, evaluate the possible solution(s) and suggest an optimum /best possible solution(s) SB8. Identify immediate or temporary solutions to resolve delays SB9. Identify sources of support that can be availed of for problem solving for various kind of problems SB10. Seek appropriate assistance from other sources to resolve problems SB11. Report problems that you cannot resolve to appropriate authority
Analytical Thinking	
The user/individual on the job needs to know and understand how to: SB12. Identify cause and effect relations in their area of work SB13. Use cause and effect relations to anticipate potential problems and their solution	



NOS Version Control

NOS Code	ISC/N0009		
Credits(NSQF)	TBD	Version number	1.0
Industry	Iron and steel	Drafted on	23/07/2014
Industry Sub-sector	All departments	Last reviewed on	30/12/2014
Occupation	Furnace Operation	Next review date	30/12/2015





CRITERIA FOR ASSESSMENT OF TRAINEES

Job Role: Stoking Car Operator: Ferro Alloys

Qualification Pack: ISC/Q5302

Sector Skill Council: Indian Iron & Steel Sector Skill Council

Guidelines for Assessment:

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC.
2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC.
3. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training 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 this criteria.
5. To pass the Qualification Pack, every trainee should score a minimum of 60% in every NOS.
6. In case of successfully passing only certain number of NOS's, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack.

NOSs	PCs	Total Marks 1000	Out Of	Marks Allocated	
				Theory	Practical
ISC/N5305: Prepare the stoking car	PC1. Interpret the checklist and understand the job requirements	200	10	5	5
	PC2. Ensure the floor is clean and no obstructions before starting the job		5	0	5
	PC3. Operating the car near the Electrodes which carry very high currents		10	5	5
	PC4. Importance of covering the electric arc with charge mix		15	5	10
	PC5. Check oil levels of engine, transmission, radiator coolant and brake		15	5	10
	PC6. Check differential and hydraulic oil levels		15	5	10
	PC7. Check the hydraulic hose and ram for leakages		15	5	10



	PC8. Check condition of parking brake, main horn, reverse horn, and head light.		15	5	10
	PC9. Check the various controls, gauges, warning lamp and other safety devices		15	5	10
	PC10. Check fan belt tension, electrolyte level and terminal tightness		15	5	10
	PC11. Check and adjust driving position, rear and side mirrors, seat belts		15	5	10
	PC12. Clean air filter dust bowls		15	5	10
	PC13. Check coolant and oil in engine		15	5	10
	PC14. Keep footplates and steps clean and free from mud, dirt and oil		10	0	10
	PC15. Report defects precisely to the supervisor if beyond scope of his role		15	5	10
		Total	200	65	135
ISC/N5306: Perform operations with the stoking car	PC1. Start the engine using the pushbutton switch and key switch together	250	5	0	5
	PC2. Ensure that the stoking car stoker's movement is smooth		5	0	5
	PC3. Ensure that the furnace is covered with the charge mix between the electrodes and centre of the electrodes		15	5	10
	PC4. Take fresh charge wherever required in consultation with the supervisor		15	5	10
	PC5. Ensure wearing safety belt while driving		10	5	5
	PC6. Ensure proper functioning of rear view camera and audio visual alarm		10	5	5
	PC7. Not use mobile phones while driving		5	0	5
	PC8. Look out for people moving on shop floor		10	0	10
	PC9. Operate the car forward and backwards carefully on the shop floor		20	5	15
	PC10. Operate car without touching the electrodes or its critical parts		20	5	15
	PC11. Ensure stoking car load and operating speed is within limits specified by the manufacturer		20	5	15



	PC12. Keep a safe distance from a tip edge and use an approved stop block before tipping over an edge		15	5	10
	PC13. Select and use the right type of brake in different situations and conditions		25	5	20
	PC14. Ensure that stoking car is always parked on firm, level ground; with handbrake applied and drive and controls disengaged		15	0	15
	PC15. Operate the stoker safely at the position and in the manner designated		25	5	20
	PC16. Ensure that no other operators travel on or stand near the stoking car		15	5	10
	PC 17. Ensure proper distribution of Charge mix in the furnace and always covered fully		20	5	15
		Total	250	60	190
ISC/N5307: Perform basic maintenance and troubleshooting of the stoking car	PC1. Track machine operating hours to assess the right service schedule	300	15	5	10
	PC2. Clean air filter dust bowls		15	5	10
	PC3. Clean footplates, pedals and steps free from mud/dirt		10	5	5
	PC4. Drain water and sediment /fuel separators		15	5	10
	PC5. Replenish coolants, lubricants and fluids		20	5	15
	PC6. Grease all greasing pins and pivot points		25	5	20
	PC7. Check battery levels and condition of the terminals and carrying out minor adjustments if required		25	5	20
	PC8. Check and maintain the tyre rims, air pressure, wheel nuts and treads		20	5	15
	PC9. Ensure the machine is on firm and level ground before attempting to carry out any maintenance activity		15	5	10
	PC10. Ensure the locking bar is in position to prevent the front and rear chassis moving and creating a crushing zone (articulated machines only)		20	5	15



	PC11. Ensure that no maintenance task on the engine is performed when running or still hot		20	5	15
	PC12. Identify any problem with the usual functioning of the Stoking Car		35	10	25
	PC13. Carry out troubleshooting to ensure completion of given task		35	10	25
	PC14. Assess when the problem is beyond his competence and report the problem to suitably qualified and competent personnel		30	10	20
		Total	300	85	215
ISC/N0008: Use basic health and safety practices at the workplace	PC1. Use protective clothing/equipment for specific tasks and work conditions	150	9	4	5
	PC2. State the name and location of people responsible for health and safety in the workplace		6	1	5
	PC3. State the names and location of documents that refer to health and safety in the workplace		2	1	1
	PC4. Identify job-site hazardous work and state possible causes of risk or accident in the workplace		8	4	4
	PC5. Carry out safe working practices while dealing with hazards to ensure the safety of self and others state methods of accident prevention in the work environment of the job role		6	1	5
	PC6. State location of general health and safety equipment in the workplace		6	1	5
	PC7. Inspect for faults, set up and safely use steps and ladders in general use		6	1	5
	PC8. Work safely in and around trenches, elevated places and confined areas		6	1	5
	PC9. Lift heavy objects safely using correct procedures		6	1	5
	PC10. Apply good housekeeping practices at all times		2	1	1
	PC11. Identify common hazard signs displayed in various areas		6	5	1



PC12. Retrieve and/or point out documents that refer to health and safety in the workplace	5	1	4
PC13. Use the various appropriate fire extinguishers on different types of fires correctly	9	4	5
PC14. Demonstrate rescue techniques applied during fire hazard	8	4	4
PC15. Demonstrate good housekeeping in order to prevent fire hazards	2	1	1
PC16. Demonstrate the correct use of a fire extinguisher	6	1	5
PC17. Demonstrate how to free a person from electrocution	6	1	5
PC18. Administer appropriate first aid to victims as required e.g. in case of bleeding, burns, choking, electric shock, poisoning etc.	8	3	5
PC19. Demonstrate basic techniques of bandaging	6	1	5
PC20. Respond promptly and appropriately to an accident situation or medical emergency in real or simulated environments	7	2	5
PC21. Perform and organize loss minimization or rescue activity during an accident in real or simulated environments	6	1	5
PC22. Administer first aid to victims in case of a heart attack or cardiac arrest due to electric shock, before the arrival of emergency services in real or simulated cases	6	1	5
PC23. Demonstrate the artificial respiration and the CPR Process	6	1	5
PC24. Participate in emergency procedures	6	1	5
PC25. Complete a written accident/incident report or dictate a report to another person, and send report to person responsible	4	1	3



	PC26. Demonstrate correct method to move injured people and others during an emergency		2	1	1
		Total	150	45	105
ISC/N0009: Works effectively with others	PC1. Accurately receive information and instructions from the supervisor and fellow workers, getting clarification where required	100	10	5	5
	PC2. Accurately pass on information to authorized persons who require it and within agreed timescale and confirm its receipt		10	5	5
	PC3. Provide information to others clearly, at a pace and in a manner that helps them to understand		10	0	10
	PC4. Display helpful behaviour by assisting others in performing tasks in a positive manner, where required and possible		10	5	5
	PC5. Consult with and assist others to maximize effectiveness and efficiency in carrying out tasks		10	5	5
	PC6. Display appropriate communication etiquette while working		10	0	10
	PC7. Display active listening skills while interacting with others at work		10	0	10
	PC8. Use appropriate tone, pitch and language to convey politeness, assertiveness, care and professionalism		10	5	5
	PC9. Demonstrate responsible and disciplined behaviours at the workplace		15	5	10
	PC10. Escalate grievances and problems to supervisor		5	0	5
		Total	100	30	70