





#### QUALIFICATIONS PACK - OCCUPATIONAL STANDARDS FOR IRON & STEEL

# What are Occupational Standards (OS)?

- Ø OS describe what individuals need to do, know and understand in order to carry out a particular job role or function
- Ø 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 – Assistant Raw Material Handling Operator

SECTOR: Iron & Steel

SUB-SECTOR: Steel, Sponge Iron, Ferro Alloys, Re-Rollers, Refractory

REFERENCE ID: ISC/Q0101

ALIGNED TO: NCO-2004/NIL

Title of Job: The job is all about handling raw materials for coke oven, blast furnace, steel melting shop, coal handling, sinter plant etc. for day to day operation of steel plant to achieve the desired production capacity.

Personal Attributes: The candidate should possess basic communication skill. Ability organize own work, identify and solve problems in the course of working. Understanding the need to take initiative and manage self and work to improve efficiency and effectiveness. This job requires the individual to work independently as well as in teams. He should be physically fit, not having colour blindness, having analytical skills, concentration levels and willingness to work in a factory environment.







Qualifications Pack Code	ISC/Q0101		
Job Role	Assistant Raw Material Handling Operator		
Credits(NSQF)	TBD	Version number	1.0
Industry	Iron & Steel	Drafted on	12/11/2014
Sub-sector	Steel, Sponge Iron, Ferro Alloys, Re- Rollers, Refractory	Last reviewed on	25/03/2015
Occupation	Raw Material Handling	Next review date	1/04/2017
NSQC Clearance on			

Job Role	Assistant Raw Material Handling Operator
Role Description	The job is all about handling raw materials for coke oven, blast furnace, steel melting shop, coal handling, sinter plant etc. for day to day operation of steel plant to achieve the desired production capacity.
NSQF level	2
Minimum Educational Qualifications	Class 8 <sup>th</sup> Pass
Maximum Educational Qualifications	Class 10 <sup>th</sup> Pass
Training (Suggested but not mandatory)	<ul> <li>Reading and writing report</li> <li>2 weeks on job training (mandatory)</li> <li>Induction training on overview of coke oven, blast furnace, sinter plant, steel melting shop etc. including blending operation</li> <li>Functioning of conveyor along with its components</li> <li>5S and safety practices</li> </ul>
Minimum Job Entry Age	18 years
Experience	<ul> <li>0-2 years as general labour/ helper in similar operation</li> <li>In lieu of minimum qualification the incumbent should have minimum 4 to 5 years' experience as general labour/ helper in similar operation</li> </ul>







Occupational Standards (OS)	ISC/N0102: Understand the assigned job of raw material handling ISC/N0103: Prepare for raw material handling operation ISC/N0104: Carry out raw material handling operation ISC/N0008: Use basic health and safety practices at the workplace ISC/N0009: Work effectively with others  Optional:
	N/A
Performance Criteria	As described in the relevant NOS units









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
СР	Control Plan
WI	Work Instructions
CNC	Computer numerically controlled
OD	Outer diameter
ID	Inner diameter
DTI	Dial test indicators
CO2	Carbon dioxide
CO2 CPR	





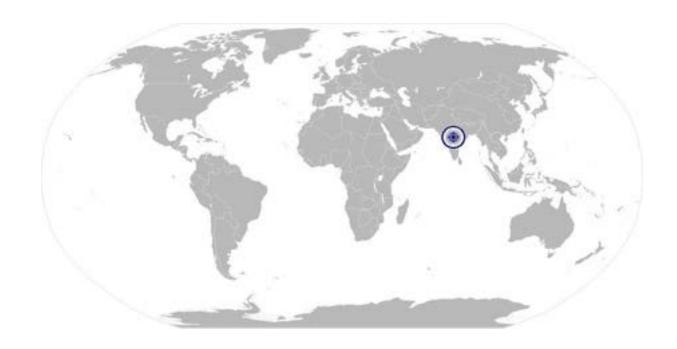




ISC/N0102:

Understand the assigned job of raw material handling

# National Occupational Standards



## <u>Overview</u>

This unit covers the understanding of the assigned job of raw material handling operation









ISC/N0102: Understand the assigned job of raw material handling

Unit Code	ISC/N0102
Unit Title (Task)	Understand the assigned job of raw material handling
Description	This unit covers the understanding of the assigned job of raw material handling operation.
Scope	<ul> <li>This unit/task covers the following:</li> <li>Understand the raw material handling job in accordance with the instruction/check list</li> <li>Understand functioning of different production units for raw material handling</li> <li>Understand the conveyor belt operation processes as per requirement</li> </ul>
Performance Criteria (P	C) w.r.t. the Scope
Element	Performance Criteria
Understand the raw material handling job in accordance with the instruction/check list	To be competent, the user /individual on the job must be able to: PC1. Ensure availability of the work instructions/check list for the assigned job PC2. Interpret the checklist / work instructions for different productions units for carrying out raw material handling PC3. Ensure proper sequence is followed during operation for filling raw materials to bunkers PC4. Seek clarification if any for different production unit for feeding raw materials to
	bunkers
Understand functioning of different production units for raw material handling	To be competent, the user /individual on the job must be able to: PC5. Understand the need of specific raw materials and quantity required for production PC6. Ensure the volume of specific raw materials (coal, iron ore, sinter, lime stone and dolomite) for various productions units are maintained up to desired level at the stock yard PC7. Understand the function of de-luting system/defogging system installed in conveyor system
Understand the conveyor belt operation processes as per requirement	To be competent, the user /individual on the job must be able to: PC8. Adhere to time limits given by supervisor PC9 Check the level of bunkers to be filled PC10. Keep all conveyor gallery and stair cases clean and free from mud, dust etc. PC11. Start the conveyor on no-load condition using the pushbutton switch for conveyor sequence operation PC12. Adjust feeding gates for loading the belt considering the capacity of the belt PC13. Ensure the main bunker is filled up to the required level for safe operation PC14. Select and use the right type of operation for proper feeding of the conveyor belt PC15. Utilize judiciously various communicating devices available in the conveyor gallery and control cabin PC16. Ensure that the belt operation is safe from all hazards by raising appropriate signal/alarm PC17. Study the log book and organize the job according to requirement PC18. Inspect the worksite to identify cleanliness of the conveyor gallery, walkway









ISC/N0102: Understand the assigned job of raw material handling

	and stair cases PC19. Maintain logbook/check list to record all activities performed before starting the conveyor system PC20. Report defects precisely to the supervisor if beyond scope of his role
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 operation checklist and maintenance of the of the same KA2. Safety policy of the company KA3. Emergency organisation of the specific work site KA4. Risk and impact of not following defined procedures/work instructions KA5. Escalation matrix for reporting identified problems KA6. Cost of equipment and loss for the company that result from damage of equipment and direct / indirect cost of accidents KA7. Implications of delays in operational process
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. Estimation of quantity/volume to be conveyed per hour for full filling the material requirement KB2. Importance of availability of sufficient stock of raw materials in the stock yard for uninterrupted production KB3. Control cabins their location and operation KB4. Sequence of handling of the raw materials for different production units KB5. Control on levers for operation of bunker/chute gates in order to load the conveyor system properly KB6. Optimal loading of belt for smooth operation with respect to time frame and schedule production KB7. Optimal load on the conveyor for rated out put KB8. Visual checks to identify damage of conveyor belt KB9. General safety rules for moving/operating conveyor system KB10. Dangers of starting the conveyor belts without signal/alarm KB11. Different types of all raw materials and alloying materials be handled KB12. Unit of measurements (volume /weight) KB13. Response to emergencies e.g. correct way to use fire extinguisher and other firefighting equipments
Skills (S) w.r.t. the scop	
Element	Skills
A. Core Skills/ Generic Skills	Writing Skills  The user/ individual on the job needs to know and understand how to:  SA1. Construct simple sentences and express ideas clearly through written communication  SA2. Fill up appropriate activity logs in required format of the company  Reading and Understanding Skills  The user/individual on the job needs to know and understand how to:  SA3. Read and interpret previous shift log book / report









ISC/N0102: Understand the assigned job of raw material handling

	SA4. Read and understand health and safety instructions, memos, reports,
	job cards, etc.
	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to:
	SA5. Express statements, opinions or information clearly so that others can hear
	and understand
	SA6. Respond appropriately to queries
D. D. C. J. J.O. III	SA7. Communicate with team members and supervisor
B. Professional Skills	Decision Making
	The user/individual on the job needs to know and understand how to:
	SB1. 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
	Plan and Organize
	The user/individual on the job needs to know and understand:
	SB2. Plan and organize their own work schedule, work area, tools, equipment and
	materials to maintain decorum and for improved productivity
	Customer Centricity
	N.A
	Problem Solving
	The user/individual on the job needs to know and understand how to:
	SB3. Think through the problem, evaluate the possible solution(s) and suggest an
	optimum /best possible solution(s)
	SB4. Identify immediate or temporary solutions to resolve delays
	SB5. Identify sources of support that can be availed of for problem solving for various kind of problems
	SB6. Seek appropriate assistance from other sources to resolve problems
	SB7. Report problems that you cannot resolve to appropriate authority
	Analytical Thinking
	The user/individual on the job needs to know and understand how to:
	SB8. Identify cause and effect relations in their area of work
	SB9. Use cause and effect relations to anticipate potential problems and their solution
	Critical Thinking
	N.A
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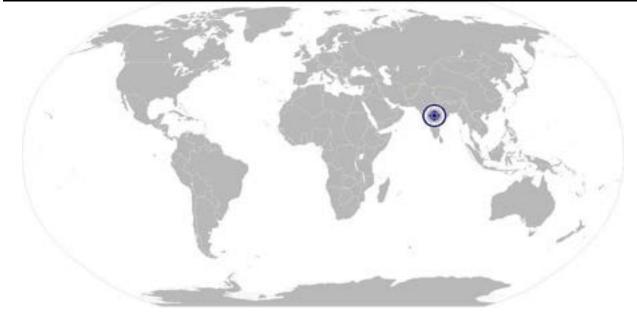


ISC/N0102:

Understand the assigned job of raw material handling

# NOS Version Control:

NOS Code	ISC/N0102		
Credits(NSQF)	TBD	Version number	1.0
Industry	Iron and Steel	Drafted on	12/11/2014
Industry Sub-sector	Steel, Sponge Iron, Ferro Alloys, Re-Rollers, Refractory	Last reviewed on	25/03/2015
Occupation	Raw Material Handling	Next review date	1/04/2017







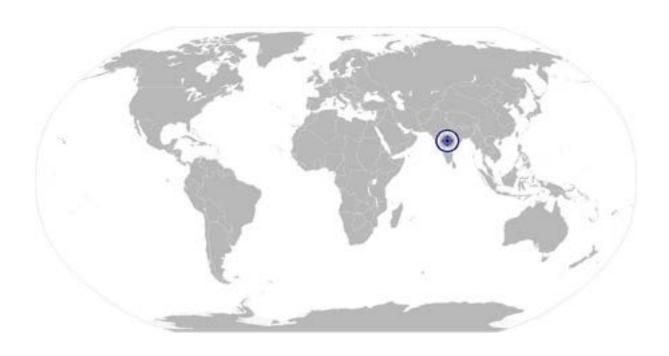




ISC/N0103:

Prepare for raw material handling operation

# National Occupational Standards



# **Overview**

This unit covers the understanding of the preparation activities of assigned job of raw material handling operation.









ISC/N0103: Prepare for raw material handling operation

Unit Code	ISC/N0103
Unit Title (Task)	Prepare for raw material handling operation
Description	This unit covers the understanding of the preparation activities of assigned job of raw material handling operation.
Scope	<ul> <li>This unit/task covers the following:</li> <li>Reach the control cabin for checking the sequence of belt operation</li> <li>Inspect the stock level of raw materials in the bunkers required for production</li> <li>Check the belt operation with all accessories in no load condition</li> </ul>
Performance Criteria (F	PC) w.r.t. the Scope
Element	Performance Criteria
Reach the control cabin for checking the sequence of belt operation	To be competent, the user /individual on the job must be able to: PC1. Check the sequence of belt operation as per job requirement PC2. Identify which material is to be conveyed as per job requirement PC3. Identify the belts by which the required materials is to be conveyed at the different production units PC4. Seek clarifications from the supervisor in case of any doubt
Inspect the stock level of raw materials in the bunkers required for production Check the belt operation with all accessories in no load condition	To be competent, the user /individual on the job must be able to: PC5. Inspect the stock level for various raw materials in the bunkers and at the stock yard to full fill the production target PC6. Inspect the pattern of loading the belt to fill the bunker within the given time schedule To be competent, the user /individual on the job must be able to: PC7. Check visually the conveyor belt with all accessories (prime movers, gear box, driving pulley, coupling, belts, conveying and return side idler, bunker gates, chutes, feeders etc.) PC8. Start the belt is no load condition PC9. Gradually open the bunker gates/feeders for control loading of the raw materials
Element	on the belt as per capacity  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 operation checklist and maintenance of the of the same KA2. Safety policy of the company KA3. Emergency organisation of the specific work site KA4. Risk and impact of not following defined procedures/work instructions KA5. Escalation matrix for reporting identified problems KA6. Cost of equipment and loss for the company that result from damage of equipment and direct / indirect cost of accidents KA7. Implications of delays in operational process
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. Estimation of quantity/volume to be conveyed per hour for full filling the material requirement KB2. Importance of availability of sufficient stock of raw materials in the stock yard for uninterrupted production









ISC/N0103: Prepare for raw material handling operation

Chille (C) was to the const	KB3. Control cabins their location and operation KB4. Sequence of handling of the raw materials for different production units KB5. Control on levers for operation of bunker/chute gates in order to load the conveyor system properly KB6. Optimal loading of belt for smooth operation with respect to time frame and schedule production KB7. Optimal load on the conveyor for rated out put KB8. Visual checks to identify damage of conveyor belt KB9. General safety rules for moving/operating conveyor system KB10. Dangers of starting the conveyor belts without signal/alarm KB11. Different types of all raw materials and alloying materials to be handled KB12. Unit of measurements (volume /weight) KB13. Response to emergencies e.g. correct way to use fire extinguisher and other firefighting equipments
Skills (S) w.r.t. the scop	
Element	Skills
A. Core Skills/ Generic Skills  B. Professional Skills	Writing Skills  The user/ individual on the job needs to know and understand how to: SA1. Construct simple sentences and express ideas clearly through written communication SA2. Fill up appropriate activity logs in required format of the company Reading and Understanding Skills  The user/individual on the job needs to know and understand how to: SA3. Read and interpret previous shift log book / report SA4. Read and understand health and safety instructions, memos, reports, job cards, etc.  Oral Communication (Listening and Speaking skills)  The user/individual on the job needs to know and understand how to: SA5. Express statements, opinions or information clearly so that others can hear and understand SA6. Respond appropriately to queries SA7. Communicate with team members and supervisor
b. Professional Skills	Decision Making  The user/individual on the job needs to know and understand how to:  SB1. 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  Plan and Organize  The user/individual on the job needs to know and understand:  SB2. Plan and organize their own work schedule, work area, tools, equipment and materials to maintain decorum and for improved productivity  Customer Centricity  N.A  Problem Solving









ISC/N0103:

Prepare for raw material handling operation

The user/individual on the job needs to know and understand how to:

SB3. Think through the problem, evaluate the possible solution(s) and suggest an optimum /best possible solution(s)

SB4. Identify immediate or temporary solutions to resolve delays

SB5. Identify sources of support that can be availed of for problem solving for various kind of problems

SB6. Seek appropriate assistance from other sources to resolve problems

SB7. Report problems that you cannot resolve to appropriate authority

#### **Analytical Thinking**

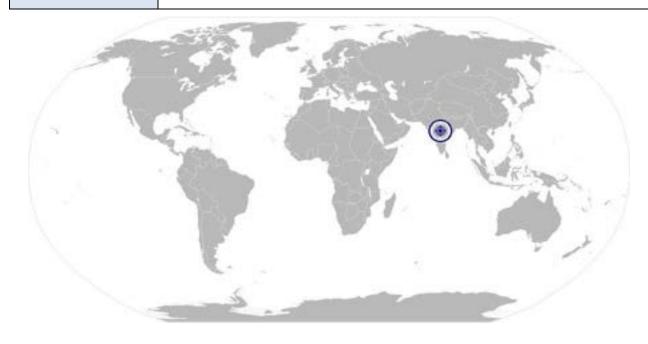
The user/individual on the job needs to know and understand how to:

SB8. Identify cause and effect relations in their area of work

SB9. Use cause and effect relations to anticipate potential problems and their solution

#### Critical Thinking

N.A









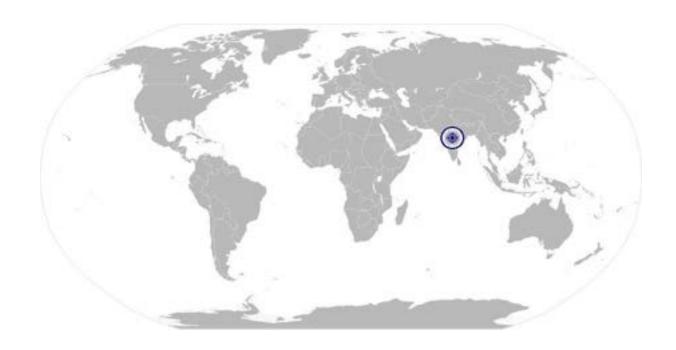


ISC/N0103:

Prepare for raw material handling operation

# NOS Version Control:

NOS Code	ISC/N0103		
Credits(NSQF)	TBD	Version number	1.0
Industry	Iron and Steel	Drafted on	12/11/2014
Industry Sub-sector	Steel, Sponge Iron, Ferro Alloys, Re-Rollers, Refractory	Last reviewed on	1/04/2015
Occupation	Raw Material Handling	Next review date	1/04/2017







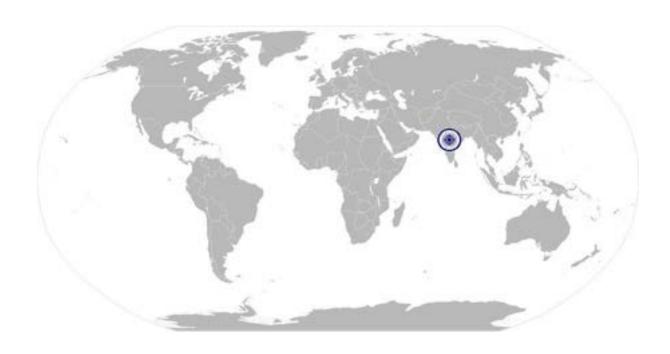




ISC/N0104:

Carry out raw material handling operation

# National Occupational Standards



# Overview

This unit covers the operation of carrying raw materials to various production units.









ISC/N0104: Carry out raw material handling operation

Unit Code	ISC/N0104			
Unit Title (Task)	Carry out raw material handling operation			
Description	This unit covers the operation of carrying raw materials to various production units.			
Scope	<ul> <li>This unit/task covers the following:</li> <li>Inspect the quality of the raw material available at the stock yard</li> <li>Conduct routine check of the bunker level for individual production unit</li> <li>Regular feedback to supervisor about the status of stock at stock yard</li> </ul>			
Performance Criteria (P	PC) w.r.t. the Scope			
Element	Performance Criteria			
Inspect the quality of the raw material available at the stock yard	To be competent, the user /individual on the job must be able to: PC1. Inspect the quality of raw material with respect to size (coal, iron ore, dolomite, lime stone, quartz, sinter etc.) PC2. Ensure mixing of raw materials for proper blending PC3. Ensure to segregate the stock of raw materials as per quality			
Conduct routine check of the bunker level for individual production unit	To be competent, the user /individual on the job must be able to: PC4. Ensure to maintain the bunker levels to avoid accumulation of fines in the bunker to avoid charging delay			
Regular feedback to supervisor about the status of stock at stock yard	To be competent, the user /individual on the job must be able to: PC5. Provide the feedback to the supervisor regularly for initiating the procurement action in time for various raw materials after checking the stock at the stock yard PC6. Ensure to maintain sufficient stock before monsoon to avoid any production delay due to raw material shortage PC7. Maintain logbook to record all activities performed and the various raw material stock level at the stock yard PC8. Report to the supervisor on completion of the assigned job			
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 operation checklist and maintenance of the of the same KA2. Safety policy of the company KA3. Emergency organisation of the specific work site KA4. Risk and impact of not following defined procedures/work instructions KA5. Escalation matrix for reporting identified problems KA6. Cost of equipment and loss for the company that result from damage of equipment and direct / indirect cost of accidents KA7. Implications of delays in operational process			
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. Estimation of quantity/volume to be conveyed per hour for full filling the material requirement KB2. Importance of availability of sufficient stock of raw materials in the stock yard for uninterrupted production KB3. Control cabins their location and operation KB4. Sequence of handling of the raw materials for different production units			









ISC/N0104: Carry out raw material handling operation

	KB5. Control on levers for operation of bunker/chute gates in order to load the conveyor system properly KB6. Optimal loading of belt for smooth operation with respect to time frame and schedule production KB7. Optimal load on the conveyor for rated out put KB8. Visual checks to identify damage of conveyor belt KB9. General safety rules for moving/operating conveyor system KB10. Dangers of starting the conveyor belts without signal/alarm KB11. Different types of all raw materials and alloying materials to be handled		
	KB12. Unit of measurements (volume /weight) KB13.Response to emergencies e.g. correct way to use fire extinguisher and other		
	firefighting equipments		
Skills (S) w.r.t. the scop	oe		
Element	Skills		
A. Core Skills/ Generic Skills	Writing Skills  The user/ individual on the job needs to know and understand how to:  SA1. Construct simple sentences and express ideas clearly through written communication  SA2. Fill up appropriate activity logs in required format of the company  Reading and Understanding Skills  The user/individual on the job needs to know and understand how to:  SA3. Read and interpret previous shift log book / report  SA4. Read and understand health and safety instructions, memos, reports, job cards, etc.  Oral Communication (Listening and Speaking skills)  The user/individual on the job needs to know and understand how to:  SA5. Express statements, opinions or information clearly so that others can hear and understand  SA6. Respond appropriately to queries  SA7. Communicate with team members and supervisor		
B. Professional Skills	Decision Making  The user/individual on the job needs to know and understand how to:  SB1. 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  Plan and Organize  The user/individual on the job needs to know and understand:  SB2. Plan and organize their own work schedule, work area, tools, equipment and materials to maintain decorum and for improved productivity  Customer Centricity  N.A  Problem Solving  The user/individual on the job needs to know and understand how to:  SB3. Think through the problem, evaluate the possible solution(s) and suggest an optimum /best possible solution(s)		



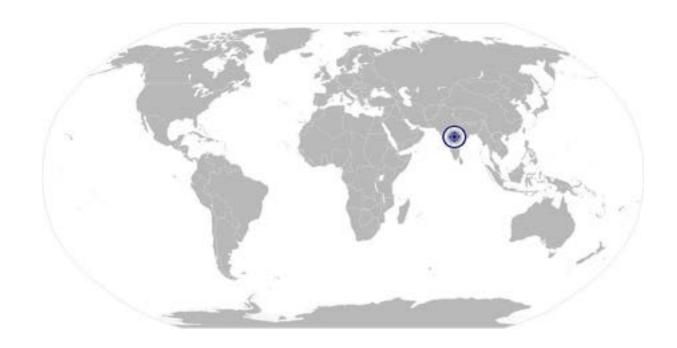






ISC/N0104: Carry out raw material handling operation

SB4. Identify immediate or temporary solutions to resolve delays
SB5. Identify sources of support that can be availed of for problem solving for various
kind of problems
SB6. Seek appropriate assistance from other sources to resolve problems
SB7. Report problems that you cannot resolve to appropriate authority
Analytical Thinking
The user/individual on the job needs to know and understand how to:
SB8. Identify cause and effect relations in their area of work
SB9. Use cause and effect relations to anticipate potential problems and their solution
Critical Thinking
N.A











ISC/N0104:

Carry out raw material handling operation

# NOS Version Control:

NOS Code	ISC/N0104		
Credits(NSQF)	TBD	Version number	1.0
Industry	Iron and Steel	Drafted on	12/11/2014
Industry Sub-sector	Steel, Sponge Iron, Ferro Alloys, Re-Rollers, Refractory	Last reviewed on	25/03/2015
Occupation	Raw Material Handling	Next review date	1/04/2017











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 Scope	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.  This unit/task covers the following:  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	The user/individual on the job should 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 CO & O2 Detector		
	Various areas are listed below:		









ISC/N0008:

Use basic health and safety practices at the workplace

- 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, tolls 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

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			
	A STATE OF THE PARTY OF THE PAR			
Circ anfatu	The user/individual on the job should be able to:			
Fire safety	PC13. Use the various appropriate fire extinguishers on different types of fires			
procedures	correctly.			
	Fire extinguishers:			
	• Sand			
	• Water			
	• Foam			
	• Co2			
	Dry powder			
	Fires:			
	Class A: Ordinary solid combustibles, e.g. wood, paper, cloth, plastic,     charged sta			
	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
	The user/individual on the job should 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 PC20. Respond promptly and appropriately to an accident situation or medical
	emergency in real or simulated environments . few General health and safety
	<ul><li>equipment are mentioned below :</li><li>• Fire extinguishers</li></ul>
	First aid equipment
	<ul> <li>Safety instruments and clothing</li> <li>Safety installations, e.g. Fire exits, exhaust fans etc.</li> </ul>
	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: <ul><li>Raising alarm</li></ul>
	Safe/efficient evacuation
Emergencies, rescue	<ul> <li>Correct means of escape</li> <li>Correct assembly point</li> </ul>
and first-aid	Roll call
procedures	<ul> <li>Correct return to work</li> <li>PC25. Complete a written accident/incident report or dictate a report to another</li> </ul>
	person, and send report to person responsible
	Incident Report should capture:  • Name
	Date/time of incident
	<ul><li>Date/time of report,</li><li>Location</li></ul>
	Environment conditions
	<ul><li>Persons involved</li><li>Sequence of events</li></ul>
	Injuries sustained
	<ul><li>Damage sustained</li><li>Actions taken</li></ul>
	Witnesses
	Supervisor/manager notified  Desuments:
	Documents:  • Fire notices
	Accident reports
	<ul><li>Safety instructions for equipment and procedures</li><li>Company notices and documents</li></ul>
	Legal documents (e.g. Government notices)
	Job titles:









Element  A. Organisational Context (Knowledge of the Company/ Organisation and its processes)	<ul> <li>Health and safety officer</li> <li>First aid officer</li> <li>Fire officer</li> <li>PC26. Demonstrate correct method to move injured people and others during an emergency</li> <li>Knowledge and Understanding</li> <li>The user/individual on the job needs to know and understand:         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         KA2. State the names and location of documents that refer to health and safety in the workplace     </li> </ul>
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. Meaning of "hazards" and "risks" KB2. Health and safety hazards commonly present in the work environment and related precautions KB3. Possible causes of risk, hazard or accident in the workplace and why risk and/or accidents are possible KB4. Activities and causes of risk and accident KB5. Methods of accident prevention KB6. Safe working practices when working with tools and machines KB7. Safe working practices while working at various hazardous sites KB8. Where to find all the general health and safety equipment in the workplace KB9. Various dangers associated with the use of electrical equipment KB10. 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 KB11. Importance of using protective clothing/equipment while working KB12. 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) KB13. Various causes of fire KB14. Techniques of using the different fire extinguishers KB15. Different methods of extinguishing fire KB16. Rescue techniques applied during a fire hazard KB17. Various types of safety signs and what they mean KB18. Appropriate basic first aid treatment relevant to the condition e.g. Shock,









ISC/N0008:

	electrical shock, bleeding, breaks to bones, minor burns, resuscitation, poisoning, eye		
	injuries		
	KB19. Content of written accident report		
	KB20. Potential injuries and ill health associated with incorrect manual handing		
	KB21. Safe lifting and carrying practices		
	KB22. Personal safety, health and dignity issues relating to the movement of a pe		
	by others		
	KB23. Potential impact to a person who is moved incorrectly		
Skills (S) w.r.t. the scop			
Element	Skills		
A. Core Skills/	Reading and Writing Skills		
Generic Skills	The user/individual on the job needs to know and understand how to:		
	SA1. Read and comprehend basic content to read labels, charts, signages		
	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		
B. Professional Skills	Decision Making		
	The user/individual on the job needs to know and understand how to:		
	SB1. 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		
	Plan and Organize		
	5		
	The user/individual on the job needs to know and understand:		
	SB2. Plan and organize their own work schedule, work area, tools, equipment and		
	materials to maintain decorum and for improved productivity		
	Customer Centricity		
	N.A		
	Problem Solving		
	The user/individual on the job needs to know and understand how to:		
	SB3. Think through the problem, evaluate the possible solution(s) and suggest an		
	optimum /best possible solution(s)		
	SB4. Identify immediate or temporary solutions to resolve delays		
	SB5. Identify sources of support that can be availed of for problem solving for various		
	kind of problems		
	SB6. Seek appropriate assistance from other sources to resolve problems		
	SB7. Report problems that you cannot resolve to appropriate authority		
	Analytical Thinking		
	The user/individual on the job needs to know and understand how to:		
	SB8. Identify cause and effect relations in their area of work		
	SB9. Use cause and effect relations to anticipate potential problems and their solution		

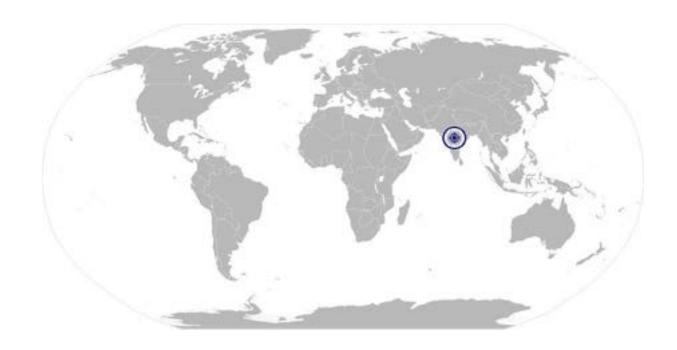








Critical Thinking
N.A









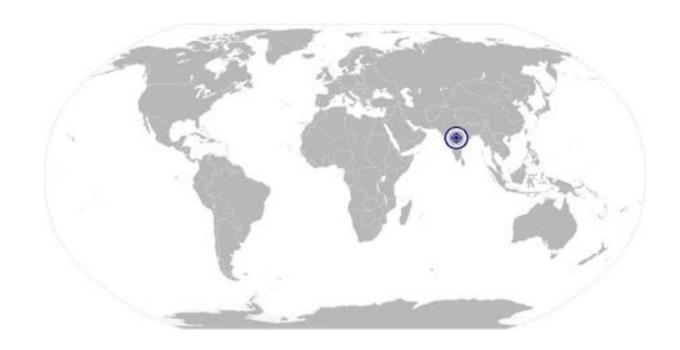


ISC/N0008:

Use basic health and safety practices at the workplace

# 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	Raw Material Handling	Next review date	1/04/2017











ISC/N0008:

Use basic health and safety practices at the workplace

# National Occupational Standards



# **Overview**

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









ISC/N0009:

Work effectively with others

Unit Code	ISC/N0009
Unit Title (Task)	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	<ul> <li>This unit/task covers the following:         <ul> <li>Ensure appropriate communication with superiors, peers and others as applicable at work place</li> <li>Demonstrate appropriate behaviour and etiquette at work place</li> </ul> </li> </ul>
Performance Criteria (F	PC) w.r.t. the Scope
Element	Performance Criteria
Ensure appropriate	The user/individual on the job should be able to:
communication with	PC1. Accurately receive information and instructions from the supervisor and fellow
superiors, peers and	workers, getting clarification where required
others as applicable	PC2. Accurately pass on information to authorized persons who require it and within
at work place	agreed timescale and confirm its receipt
	PC3. Provide information to others clearly, at a pace and in a manner that helps them
Demonstrate	to understand The user/individual on the job should be able to:
appropriate	PC4. Display helpful behaviour by assisting others in performing tasks in a positive
behaviour and	manner, where required and possible
etiquette at work	PC5. Consult with and assist others to maximize effectiveness and efficiency in
place	carrying out tasks
piaco	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
Element	Knowledge and Understanding
A. Organisational	The user/individual on the job needs to know and understand:
Context	KA1. Legislation, standards, policies, and procedures followed in the company relevant
(Knowledge of the	to own employment and performance conditions
Company/	KA2. Reporting structure, inter-dependent functions, lines and procedures in the work area
Organisation and	KA3. Relevant people and their responsibilities within the work area
its processes)	KA4. Escalation matrix and procedures for reporting work and employment related
,	issues









ISC/N0009: Work effectively with others

B. Technical	The user/individual on the job needs to know and understand:
Knowledge	KB1. Various categories of people that one is required to communicate and co-
Knowledge	ordinate with in the organization
	KB2. Importance of effective communication in the workplace
	<u>'</u>
	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
	A CA CA

Skills (S) w.r.t. the sco	pe
Element	Skills
A. Core Skills/	Reading and Writing Skills
Generic 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. Provide clear instructions to co-workers, subordinates others
B. Professional Skills	Decision Making
	The user/individual on the job needs to know and understand how to: SB1. 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 Plan and Organize
	The user/individual on the job needs to know and understand: SB2. Plan and organize their own work schedule, work area, tools, equipment and materials to maintain decorum and for improved productivity









ISC/N0009: Work effectively with others

Customer Centricity	
N.A	

#### **Problem Solving**

The user/individual on the job needs to know and understand how to:

SB3. Think through the problem, evaluate the possible solution(s) and suggest an optimum /best possible solution(s)

SB4. Identify immediate or temporary solutions to resolve delays

SB5. Identify sources of support that can be availed of for problem solving for various kind of problems

SB6. Seek appropriate assistance from other sources to resolve problems

SB7. Report problems that you cannot resolve to appropriate authority

#### **Analytical Thinking**

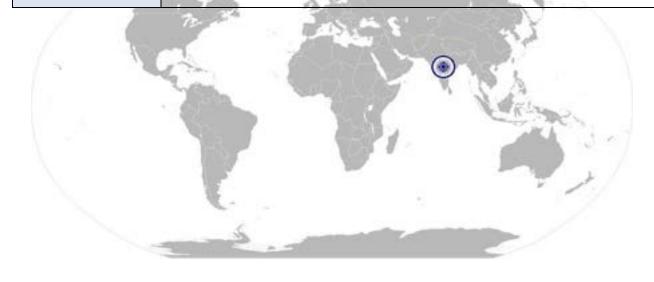
The user/individual on the job needs to know and understand how to:

SB8. Identify cause and effect relations in their area of work

SB9. Use cause and effect relations to anticipate potential problems and their solution

#### **Critical Thinking**

NA









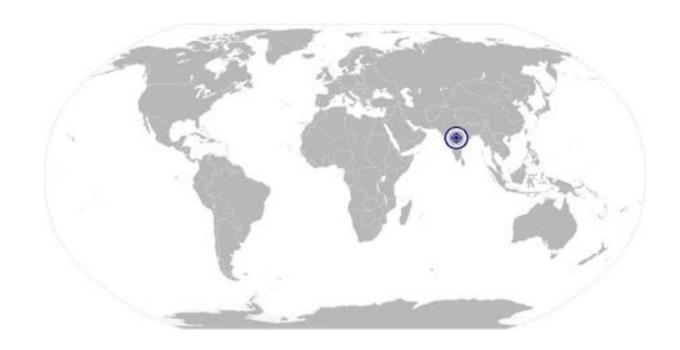


ISC/N0009:

Work effectively with others

# 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	Raw Material Handling	Next review date	1/04/2017		











#### CRITERIA FOR ASSESSMENT OF TRAINEES

<u>Job Role</u>: Assistant Raw Material Handling Operator

Qualification Pack: ISC/Q0101

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.

				Marks A	Illocated
Assessment outcomes	Assessment Criteria for outcomes	Total Marks 1000	Out Of	Theory	Practical
ISC/N0102: Understand the assigned	PC1. Ensure availability of the work instructions/check list for the assigned job		15	5	10
job of raw material handling	PC2. Interpret the checklist / work instructions for different productions units for carrying out raw material handling	350	15	5	10
	PC3. Ensure proper sequence is followed during operation for filling raw materials to bunkers		20	5	15
	PC4. Seek clarification if any for different production unit for feeding raw materials to bunkers		20	5	15









PC5. Understand the need of specific raw materials and quantity required for production	20	5	15
PC6. Ensure the volume of specific raw materials (coal, iron ore, sinter, lime stone, dolomite, quartz, pellets) for various productions units are maintained up to desired level at the stock yard	20	5	15
PC7. Understand the function of de-luting system/defogging system installed in conveyor system	20	5	15
PC8. Adhere to time limits given by supervisor	15	5	10
PC9. Check the level of bunkers to be filled	15	5	10
PC10. Keep all conveyor gallery and stair cases clean and free from mud, dust etc.	15	5	10
PC11. Start the conveyor on no-load condition using the pushbutton switch for conveyor sequence operation	20	5	15
PC12. Adjust feeding gates for loading the belt considering the capacity of the belt	20	5	15
PC13. Ensure the main bunker is filled up to the required level for safe operation	20	5	15
PC14. Select and use the right type of operation for proper feeding of the conveyor belt	20	5	15
PC15. Utilize judiciously various communicating devices available in the conveyor gallery and control cabin	15	5	10
PC16. Ensure that the belt operation is safe from all hazards by raising appropriate signal/alarm	20	5	15
PC17. Study the log book/check list and organize the job according to requirement	15	5	10
PC18. Inspect the worksite to identify cleanliness of the conveyor gallery, walkway and stair cases	15	5	10
PC19. Maintain logbook to record all activities performed before starting the conveyor system	15	5	10









	PC20. Report defects precisely to the supervisor if beyond scope of his role		15	5	10
		Total	350	100	250
ISC/N0103: Prepare for	PC1. Check the sequence of belt operation as per job requirement		20	5	15
raw material handling	PC2. Identify which material is to be conveyed as per job requirement		25	5	20
operation	PC3. Identify the belts by which the required materials is to be conveyed at the different production units		25	5	20
	PC4. Seek any clarifications form the supervisor in case of any doubt		20	5	15
	PC5. Inspect the stock level for various raw materials in the bunkers and at the stock yard to full fill the production target		25	5	20
	PC6. Inspect the pattern of loading the belt to fill the bunker within the given time schedule	200	25	5	20
	PC7. Check visually the conveyor belt with all accessories (prime movers, gear box, driving pulley, coupling, belts, conveying and return side idler, bunker gates, chutes, feeders etc.)		20	5	15
	PC8. Start the belt is no load condition		20	5	15
	PC9. Gradually open the bunker gates/feeders for control loading of the raw materials on the belt as per capacity		20	5	15
		Total	200	45	155
ISC/N0104: Carry out raw material	PC1. Inspect the quality of raw material with respect to size (coal, iron ore, dolomite, lime stone, quartz, sinter etc.)		25	5	20
handling operation	PC2. Ensure mixing of raw materials for proper blending	200	30	10	20
	PC3. Ensure to segregate the stock of raw materials as per quality	200	30	10	20
	PC4. Ensure to maintain the bunker levels to avoid accumulation of fines in the bunker to avoid charging delay		25	5	20









	PC5. Provide the feedback to the supervisor regularly for initiating the procurement action in time for various raw materials after checking the stock at the stock yard		20	5	15
	PC6. Ensure to maintain sufficient stock before monsoon to avoid any production delay due to raw material shortage	30	10	20	
	PC7. Maintain logbook to record all activities performed and the various raw material stock level at the stock yard		20	5	15
	PC8. Report to the supervisor on completion of the assigned job		20	5	15
		Total	200	55	145
ISC/N0008: Use basic	PC1. Use protective clothing/equipment for specific tasks and work conditions		10	5	5
health and safety practices at the	PC2. State the name and location of people responsible for health and safety in the workplace		5	0	5
workplace	PC3. State the names and location of documents that refer to health and safety in the workplace		1	0	1
	PC4. Identify job-site hazardous work and state possible causes of risk or accident in the workplace		9	5	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	150	10	5	5
	PC6. State location of general health and safety equipment in the workplace		5	0	5
	PC7. Inspect for faults, set up and safely use steps and ladders in general use		5	0	5
	PC8. Work safely in and around trenches, elevated places and confined areas		5	0	5
	PC9. Lift heavy objects safely using correct procedures		5	0	5
	PC10. Apply good housekeeping practices at all times		1	0	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	4	0	4
PC13. Use the various appropriate fire extinguishers on different types of fires correctly	9	5	4
PC14. Demonstrate rescue techniques applied during fire hazard	10	5	5
PC15. Demonstrate good housekeeping in order to prevent fire hazards	1	0	1
PC16. Demonstrate the correct use of a fire extinguisher	4	0	4
PC17. Demonstrate how to free a person from electrocution	5	0	5
PC18. Administer appropriate first aid to victims as required e.g. in case of bleeding, burns, choking, electric shock, poisoning etc.	10	5	5
PC19. Demonstrate basic techniques of bandaging	5	0	5
PC20. Respond promptly and appropriately to an accident situation or medical emergency in real or simulated environments	10	5	5
PC21. Perform and organize loss minimization or rescue activity during an accident in real or simulated environments	5	0	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	0	5
PC23. Demonstrate the artificial respiration and the CPR Process	5	0	5
PC24. Participate in emergency procedures	5	0	5
PC25. Complete a written accident/incident report or dictate a report to another person, and send report to person responsible	9	5	4









	PC26. Demonstrate correct method to move injured people and others during an emergency		1	0	1
		Total	150	45	105
ISC/N0009: Work effectively with others	PC1. Accurately receive information and instructions from the supervisor and fellow workers, getting clarification where required		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	100	10	5	5
	PC5. Consult with and assist others to maximize effectiveness and efficiency in carrying out tasks	100	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