



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

### 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- Iron & Steel- Pipe line Fitter & Maintenance

**SECTOR:** Iron & Steel

**SUB-SECTOR:** Mechanical Maintenance

**OCCUPATION:** Fitter

**REFERENCE ID:** ISC/Q0813

**ALIGNED TO:** NCO-2004/NIL

**Brief Job Description:** The job is to maintain pipe lines across steam line, water line, gas line etc. across the plant. This also involves up-keeping, monitoring and maintenance of pipe lines.

**Personal Attributes:** 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, problem solving attitude, high concentration levels and willingness to work in a factory environment.

#### Contact Us:

Indian Iron and Steel  
Sector Skill Council  
Royal Exchange, 6 N.S.  
Road, Kolkata- 700 001  
Tel: 09831052652  
parimalbiswas.iisssc@ii  
windia.com



<b>Qualifications Pack Code</b>	<b>ISC/Q0813</b>		
<b>Job Role</b>	<b>Iron &amp; Steel-Pipe line Fitter &amp; Maintenance</b>		
<b>Credits(NSQF)</b>	<b>TBD</b>	<b>Version number</b>	<b>1.0</b>
<b>Industry</b>	<b>Iron &amp; Steel</b>	<b>Drafted on</b>	<b>08/09/2014</b>
<b>Sub-sector</b>	<b>Mechanical Maintenance</b>	<b>Last reviewed on</b>	<b>25/03/2015</b>
<b>Occupation</b>	<b>Fitter</b>	<b>Next review date</b>	<b>25/03/2016</b>
<b>NSQC Clearance on</b>			

**Job Details**

<b>Job Role</b>	<b>Iron &amp; Steel-Pipe line Fitter &amp; Maintenance</b>
<b>Role Description</b>	The job holder maintains pipe lines across steam line, water line, gas line etc. across the plant. This job holder is also responsible for up keeping, monitoring and maintenance of pipe lines, fabricate pipe lines as per requirement, laying out pipe line during maintenance operations.
<b>NSQF level</b>	3
<b>Minimum Educational Qualifications</b>	10 <sup>th</sup> Pass, preferably
<b>Maximum Educational Qualifications</b>	ITI Pass
<b>Training</b> (Suggested but not mandatory)	<ul style="list-style-type: none"> <li>• 2 weeks hands on training (mandatory)</li> <li>• Reading and interpreting drawings</li> <li>• Machining, welding, gas cutting, assembling</li> <li>• Working knowledge of tools &amp; fixtures</li> <li>• Use &amp; working mechanisms of measuring instruments</li> <li>• 5S and safety practices</li> <li>• Working at heights, confined spaces &amp; high temperatures</li> </ul>
<b>Minimum Job Entry Age</b>	18 years
<b>Experience</b>	<ul style="list-style-type: none"> <li>• 0-2 years' experience in similar function</li> <li>• In lieu of minimum qualification the incumbent should have minimum 3 to 5 years relevant experience in the similar field/function under an experienced supervisor as</li> </ul>



	utility hand/helper
<p><b>Applicable National Occupational Standards (NOS)</b></p>	<p>Compulsory:</p> <ol style="list-style-type: none"> <li>1. <a href="#">ISC/N0820: Understand the assigned pipe line job</a></li> <li>2. <a href="#">ISC/N0821: Prepare for assigned pipe line job operation</a></li> <li>3. <a href="#">ISC/N0822: Carry out the assigned pipe line operation</a></li> <li>4. <a href="#">ISC/N0023: Activities specific to pipe line operation</a></li> <li>5. <a href="#">ISC/N0008: Use basic health and safety practices at the workplace</a></li> <li>6. <a href="#">ISC/N0009: Work effectively with others</a></li> </ol> <p>Optional:</p> <p>N/A</p>
<p><b>Performance Criteria</b></p>	<p>As described in the relevant NOS units</p>



**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.

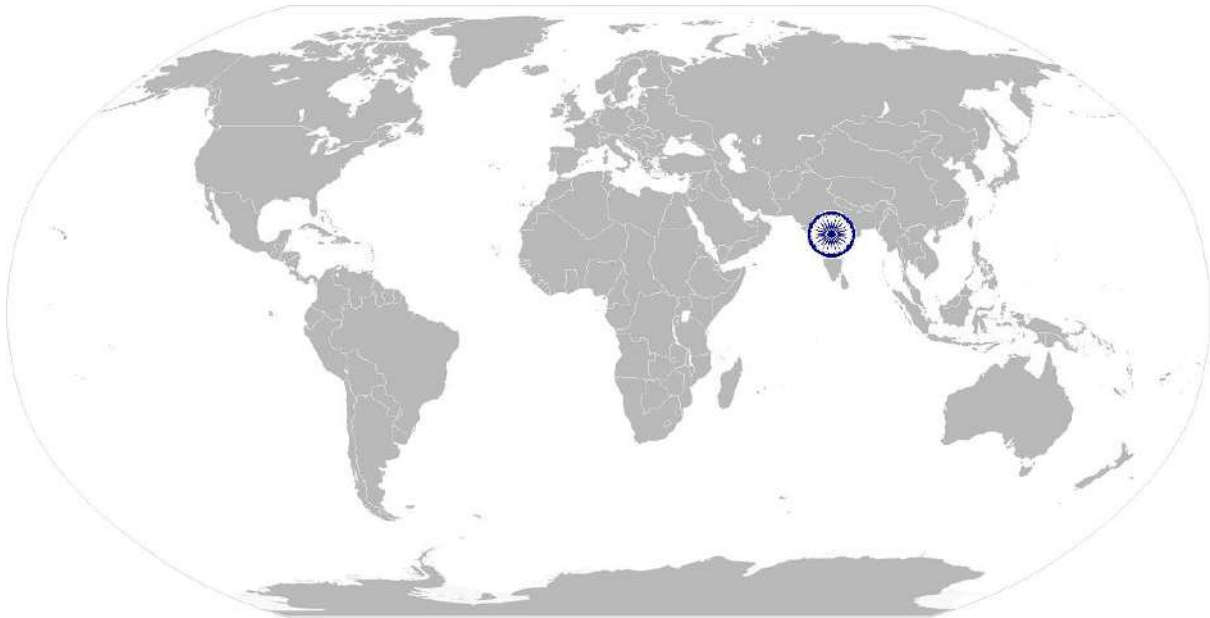


Sub-Sector	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
Sub-functions	Sub-functions are sub-activities essential to fulfil the achieving the objectives of the function.
Technical Knowledge	Technical Knowledge is the specific knowledge needed 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.
<b>Keywords /Terms</b>	<b>Description</b>
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**



# National Occupational Standards



## Overview

This unit is about understanding the job requirements for pipe line in accordance with the checklist and get any clarifications on the same



ISC/N0820

Understand the assigned pipe line job

National Occupational Standard

<b>Unit Code</b>	<b>ISC/N0820</b>
<b>Unit Title (Task)</b>	<b>Understand the assigned pipe line job</b>
<b>Description</b>	This unit is about understanding the requirements of the pipe line job after receiving the job details from the supervisor, seek any clarifications on the requirements of the job and identify the tools and tackles that would be needed to carry out the pipe line job
<b>Scope</b>	<p>This unit/task covers the following:</p> <ul style="list-style-type: none"> <li>• Understand the assigned pipe line job in accordance with the instructions</li> <li>• Understand the pipe line layout drawings</li> <li>• Seek clarifications with respect to the layout of pipe line drawings, if any</li> <li>• Identify the tools and tackles that are required to carry out the assigned pipe line job</li> </ul>
<b>Performance Criteria (PC) w.r.t. the Scope</b>	
<b>Element</b>	<b>Performance Criteria</b>
<b>Understand the assigned pipe line job in accordance with the instructions</b>	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. Interpret the pipe line layout drawing and understand the pipe line job requirements</p> <p>PC2. Plan, as appropriate to carry out the pipe line job</p>
<b>Understand the pipe line layout drawings</b>	<p>PC3. Understand the layout drawing with necessary fittings</p> <p>PC4. Understand the specification of pipe line to be used for the job</p> <p>PC5. Understand the sequence of activities to complete the pipe line circuit as per layout drawing</p> <p>PC6. Read and interpret the pipe line circuit drawings and ensure correct selection of fittings as per specification for maintaining the inclination and layout</p>
<b>Seek clarifications with respect to the layout of pipe line drawings, if any</b>	<p>PC7. Identify any clarifications that he/she wants to seek with respect to the pipe line layout/circuit drawing</p> <p>PC8. Recognize whom to contact for clarifications on the piping design</p> <p>PC9. Escalate the concern to the supervisor or shift-in-charge, if needed</p>
<b>Identify the tools and tackles that are required to carry out the assigned job</b>	<p>PC10. Identify tools, tackles &amp; equipment required to perform the operation</p> <p>PC11. Ask helper to carry tools and pipe fittings required to the desired work site</p> <p>PC12. Report to stores / supervisor in case of non-availability of tools &amp; tackles, pipe and pipe line fittings or stock-out</p>
<b>Element</b>	<b>Knowledge and Understanding</b>
<b>A. Organisational Context</b> (Knowledge of the Company/ Organisation and its processes)	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. Quality and damage checks to be done and importance of the same</p> <p>KA2. Risk and impact of not following defined procedures/work instructions</p> <p>KA3. Escalation matrix for reporting identified issues</p>
<b>B. Technical Knowledge</b>	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. Pipe line lay out / circuit drawings</p>



ISC/N0820

Understand the assigned pipe line job

	<p>KB2. Tools &amp; tackles with specified fittings to be used for the job</p> <p>KB3. Activities regarding layout and assembly of critical pipe line</p> <p>KB4. Implications of not adhering to sequence of activities and operations</p> <p>KB5. Safety precautions to be taken while working on a particular gas/steam/high pressure lines etc.</p> <p>KB6. Fabrication process (bending, assembling and threading etc.) of pipe lines</p>
<b>Skills (S) [Optional]</b>	
<b>Element</b>	<b>Skills</b>
<b>A. Core Skills/ Generic Skills</b>	<b>Writing Skills</b>
	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 technical forms, process charts, activity logs in required format of the company
	<b>Reading and Understanding Skills</b>
	The user/individual on the job needs to know and understand how to: SA3. Read and interpret engineering and machine drawings SA4. Read and understand manuals, health and safety instructions, memos, reports, job cards, etc.
	<b>Oral Communication (Listening and Speaking skills)</b>
	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 supervisor SA8. Communicate with team members
	<b>B. Professional Skills</b>
	<b>Decision Making</b>
<b>N.A</b>	
<b>Plan and Organize</b>	
The user/individual on the job needs to know and understand how to: SB1. Handle different machines and tools wearing protective accessories SB2. Position mechanical components in machines according to design requirements	
<b>Customer Centricity</b>	
<b>N.A</b>	
<b>Problem Solving</b>	
<b>N.A</b>	
<b>Analytical Thinking</b>	
The user/individual on the job needs to know and understand how to: SB3. Diagnose common problems in the tools based on visual inspection, sound, temperature etc. SB4. Suggest improvements(if any) in maintenance processes based on experience	
<b>Critical Thinking</b>	
<b>N.A</b>	



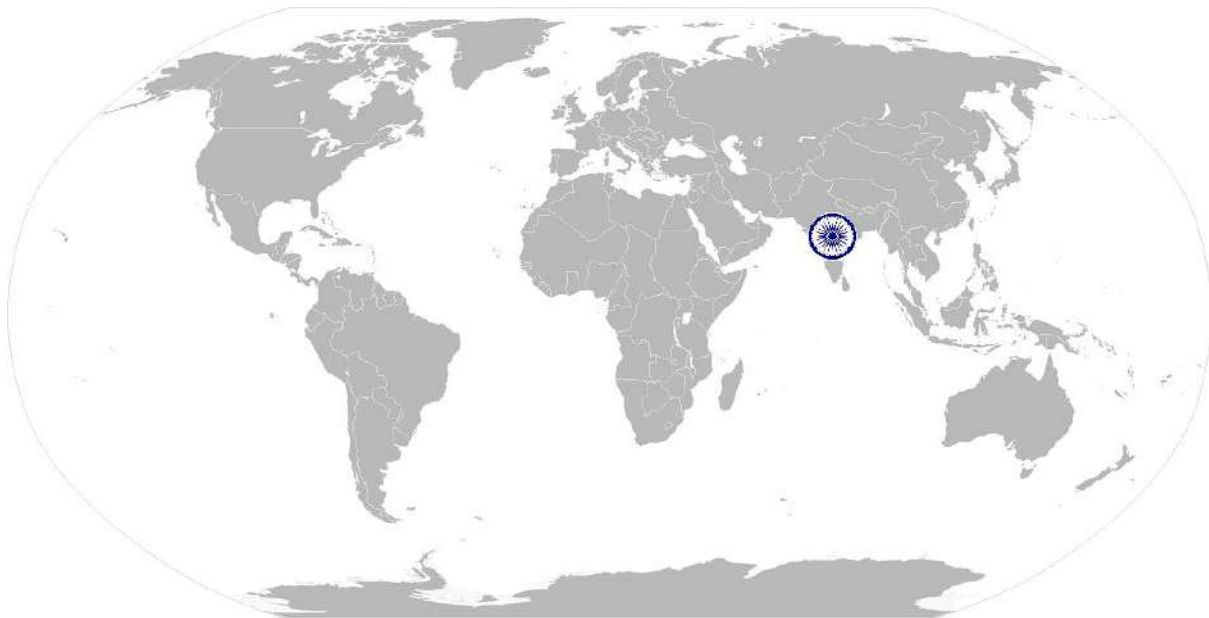


ISC/N0820

Understand the assigned pipe line job

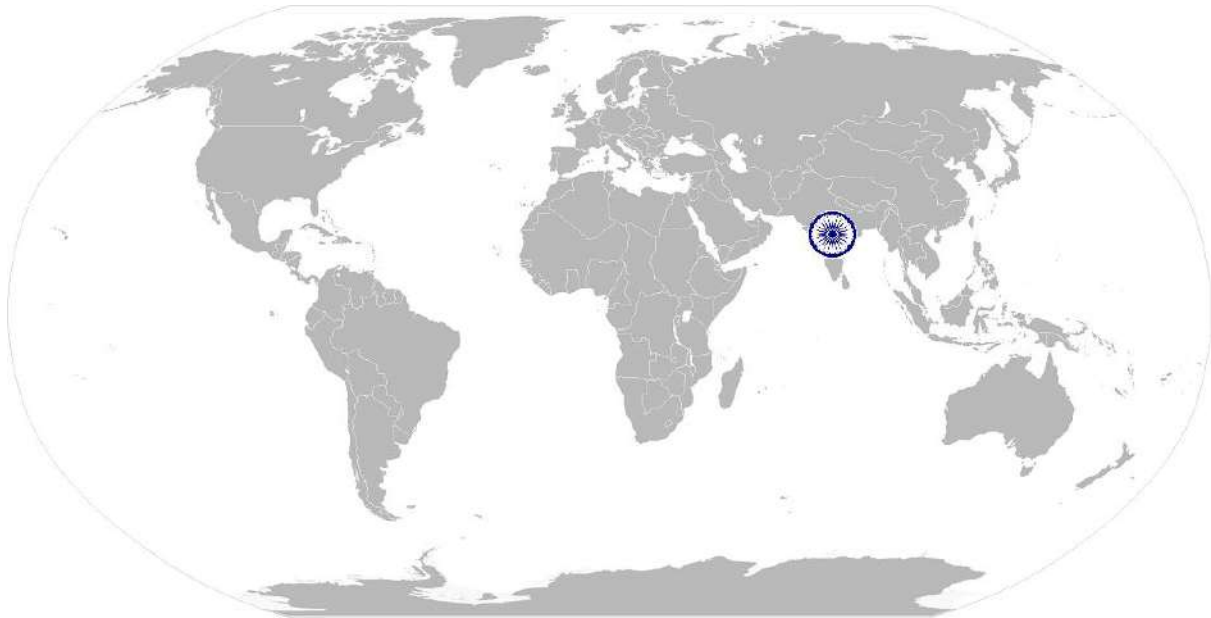
## NOS Version Control

NOS Code	ISC/N0820		
Credits(NSQF)	TBD	Version number	1.0
Industry	Iron and steel	Drafted on	08/09/2014
Industry Sub-sector	Mechanical Maintenance	Last reviewed on	25/03/2015
Occupation	Fitter	Next review date	25/03/2016





# National Occupational Standards



## Overview

This unit is about inspecting the equipment for scheduled maintenance or defects and preparing the equipment for carrying out the operation of pipe line



ISC/N0821

Prepare for assigned pipe line job operation

<b>Unit Code</b>	<b>ISC/N0821</b>
<b>Unit Title (Task)</b>	<b>Prepare for assigned pipe line job operation</b>
<b>Description</b>	This unit is about inspecting the pipe line layout for scheduled maintenance or defects and testing the pipe line circuit before operation.
<b>Scope</b>	This unit/task covers the following: <ul style="list-style-type: none"> <li>Reach the site and inspect the pipe line circuit</li> <li>Collect specified fittings and materials required for pipe line job</li> </ul>
<b>Performance Criteria (PC) w.r.t. the Scope</b>	
<b>Element</b>	<b>Performance Criteria</b>
<b>Reach the site and inspect the pipe line circuit</b>	To be competent, the user/individual on the job must be able to: PC1. Reach the site with desired tools, tackles and fittings/hardware required for the job PC2. Identify the job execution methodology
<b>Collect specified fittings and materials required for pipe line job</b>	PC3. Prepare the list of spares and fittings required for completion of job PC4. Ensure that desired tools and tackles match the job specifications PC5. Ensure tools, tackles and fittings required for assembly are free from physical damage and ready to use PC6. Report damaged / defective pipe line as per the escalation Matrix PC7. Prepare QAP process, fabricate, repair, replacement process of pipe line
<b>Element</b>	<b>Knowledge and Understanding</b>
<b>A. Organisational Context</b> (Knowledge of the Company/ Organisation and its processes)	The user/individual on the job needs to know and understand: KA1. Quality and damage checks to be done and importance of the same KA2. Risk and impact of not following defined procedures/work instructions KA3. Escalation matrix for reporting identified issues KA4. Plant layout and location of various departments
<b>B. Technical Knowledge</b>	The user/individual on the job needs to know and understand: KB1. Normal running hazard/ characteristics of relevant pipe line KB2. Possible causes of common problems during assembly & their remedies KB3. Tools, tackles and fittings required for the operation KB4. Standard specifications of pipe and pipe fittings KB5: Pipe line circuit isolation knowledge KB6: Hazards associated with residual substance in gas/steam/high pressure line
<b>Skills (S) [Optional]</b>	
<b>Element</b>	<b>Skills</b>
<b>A. Core Skills/ Generic Skills</b>	<b>Writing Skills</b> 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 technical forms, activity logs in required



ISC/N0821

Prepare for assigned pipe line job operation

	format of the company
	<b>Reading Skills</b>
	The user/individual on the job needs to know and understand how to: SA3. Read and understand manuals, health and safety instructions, memos, reports, job cards, specifications of spare parts etc.
	<b>Oral Communication (Listening and Speaking skills)</b>
	The user/individual on the job needs to know and understand how to: SA4. Express statements, opinions or information clearly so that others can hear and understand SA5. Respond appropriately to queries SA6. Communicate with supervisor, team members, other departments e.g – stores, operations, etc.
<b>B. Professional Skills</b>	<b>Decision Making</b>
	<b>N.A.</b>
	<b>Plan and Organize</b>
	<b>N.A</b>
	<b>Customer Centricity</b>
	<b>N.A</b>
	<b>Problem Solving</b>
	<b>N.A</b>
	<b>Analytical Thinking</b>
	The user/individual on the job needs to know and understand how to: SB1. Diagnose common problems in the tools based on visual inspection, sound, temperature etc. SB2. Suggest improvements(if any) in assembly process based on experience
	<b>Critical Thinking</b>
<b>N.A</b>	

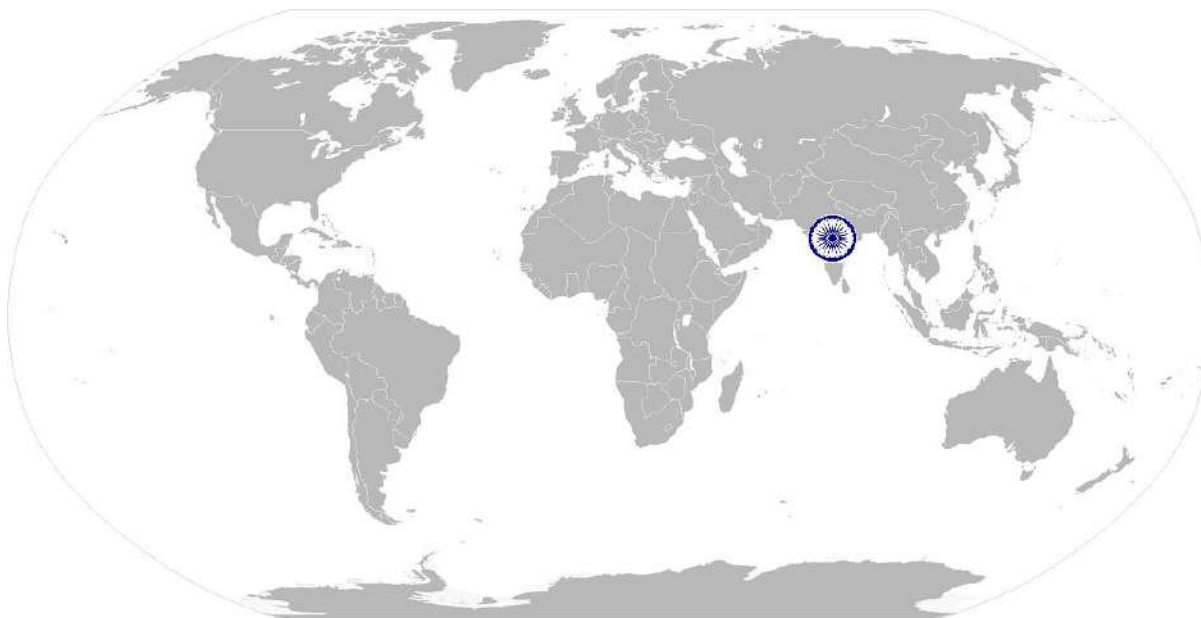


ISC/N0821

Prepare for assigned pipe line job operation

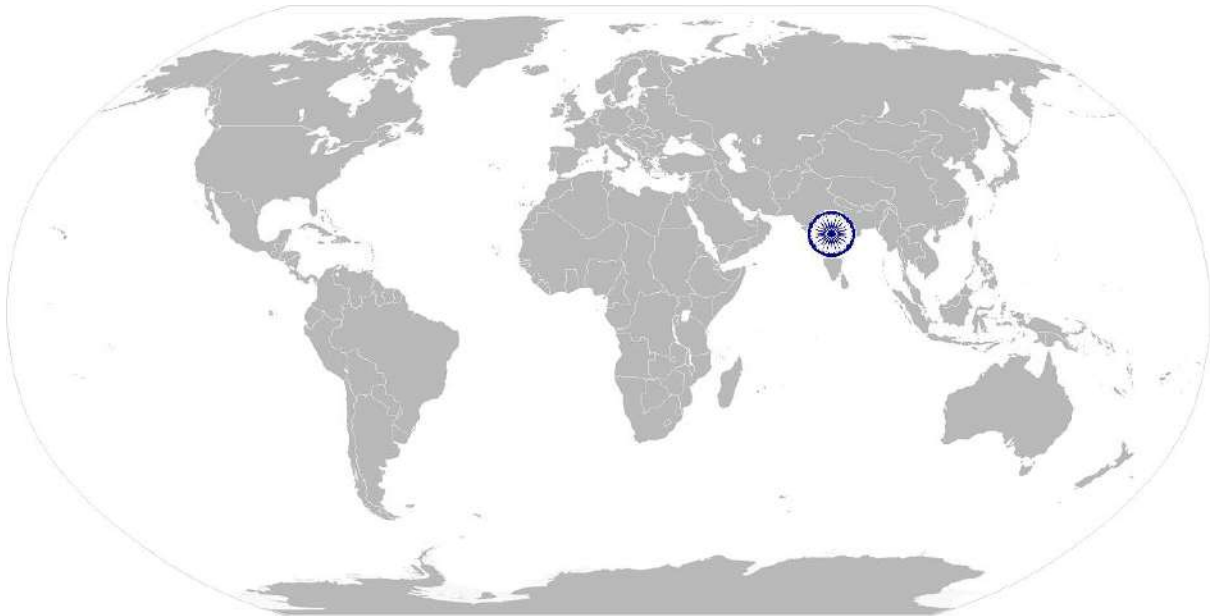
### **NOS Version Control**

<b>NOS Code</b>	<b>ISC/N0821</b>		
<b>Credits(NSQF)</b>	<b>TBD</b>	<b>Version number</b>	<b>1.0</b>
<b>Industry</b>	<b>Iron and steel</b>	<b>Drafted on</b>	<b>08/09/2014</b>
<b>Industry Sub-sector</b>	<b>Mechanical Maintenance</b>	<b>Last reviewed on</b>	<b>25/03/2015</b>
<b>Occupation</b>	<b>Fitter</b>	<b>Next review date</b>	<b>25/03/2016</b>





# National Occupational Standards



## Overview

This unit is about carrying out the operations for pipe line in terms of rectifying the identified problem or carrying out scheduled maintenance



ISC/N0822

Carry out the assigned pipe line operation

<b>Unit Code</b>	<b>ISC/N0822</b>
<b>Unit Title (Task)</b>	<b>Carry out the assigned pipe line operation</b>
<b>Description</b>	This unit is about carrying out the operations for pipe lines in terms of rectifying the identified problem or carrying out scheduled maintenance
<b>Scope</b>	This unit/task covers the following: <ul style="list-style-type: none"> <li>• Conduct routine maintenance of pipe lines and rectify /repair</li> <li>• Conduct tests to ensure fitness for use</li> <li>• Communicate to supervisor about completion of work</li> </ul>
<b>Performance Criteria (PC) w.r.t. the Scope</b>	
<b>Element</b>	<b>Performance Criteria</b>
<b>Conduct routine maintenance of pipe lines and rectify /repair</b>	To be competent, the user/individual on the job must be able to: PC1. Dismantle the pipe line circuit, as needed PC2. Correct the defect in the pipe line circuit and replace the defective part PC3. Assemble the parts according to the pipe line drawings, as required PC4. Fasten mechanical components/ subassemblies together using pipe, pipe fittings using hand/ power tools PC5. Set and adjust the pipe line / fittings using pipe spanner and hand tools PC6. Re assemble the pipe line with fittings post correcting the defect PC7. Develop repair process/carry out repair process as per SOP PC8. Handle hazardous material as per SOP PC9. Fabrication of pipeline as per circuit drawing
<b>Conduct tests to ensure fitness for use</b>	PC10. Ensure the layout of pipe lines as per specified circuit drawings PC11. Check proper clamping to ensure the rigidity PC12. Pressure test of pipe line to ensure it is leak proof before handover PC13. Record the test results in the prescribed format of the organization
<b>Communicate to supervisor about completion of work</b>	PC14. Ensure all activities are complete according to checklist PC15. Communicate to supervisor on completion of given job in case of any deviations from checklist
<b>Element</b>	<b>Knowledge and Understanding</b>
<b>A. Organisational Context</b> (Knowledge of the Company/ Organisation and its processes)	The user/individual on the job needs to know and understand: KA1. Quality and damage checks to be done and importance of the same KA2. Contact person across departments for spare parts, information etc. KA3. Escalation matrix for reporting identified issues KA4. Risk and impact of not following defined procedures/work instructions
<b>B. Technical Knowledge</b>	The user/individual on the job needs to know and understand: KB1. Assembling techniques such as aligning, bending, fixing, mechanical jointing, threaded jointing, sealing etc. KB2. Steps required to assemble/ dismantle pipe line circuit as per pipe line lay out KB3. Checks that need to be made to ensure that the pipe line circuit is safe and ready



ISC/N0822

Carry out the assigned pipe line operation

	<p>to use</p> <p>KB4. Proper layout and rigid fixing for trouble free operation</p> <p>KB5. Possible causes of common problems during assembly &amp; their remedies</p> <p>KB6. Units of measurement</p> <p>KB7. Response to emergencies e.g. water supply failures, fire and system failures</p> <p>KB8. Use of measuring instruments e.g. steel scale, steel tape, micrometer, Vernier etc.</p> <p>KB9. Compilation of pressure test results in prescribed format</p>
<b>Skills (S) [Optional]</b>	
<b>Element</b>	<b>Skills</b>
<b>A. Core Skills/ Generic Skills</b>	<b>Writing Skills</b>
	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 technical forms, process charts, activity logs in required format of the company
	<b>Reading Skills</b>
	The user/individual on the job needs to know and understand how to: SA3. Read and interpret engineering and machine drawings SA4. Read and understand manuals, memos, reports, job cards, etc.
	<b>Oral Communication (Listening and Speaking skills)</b>
	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 supervisor, team members, other departments e.g – operations, stores etc.
	<b>B. Professional Skills</b>
<b>Decision Making</b>	
<b>N.A.</b>	
<b>Plan and Organize</b>	
<b>N.A</b>	
<b>Customer Centricity</b>	
<b>N.A</b>	
<b>Problem Solving</b>	
<b>N.A</b>	
<b>Analytical Thinking</b>	
The user/individual on the job needs to know and understand how to: SB1. Diagnose common problems in the tools based on visual inspection, sound, temperature etc. SB2. Suggest improvements(if any) in assembly process based on experience	
<b>Critical Thinking</b>	
<b>N.A</b>	



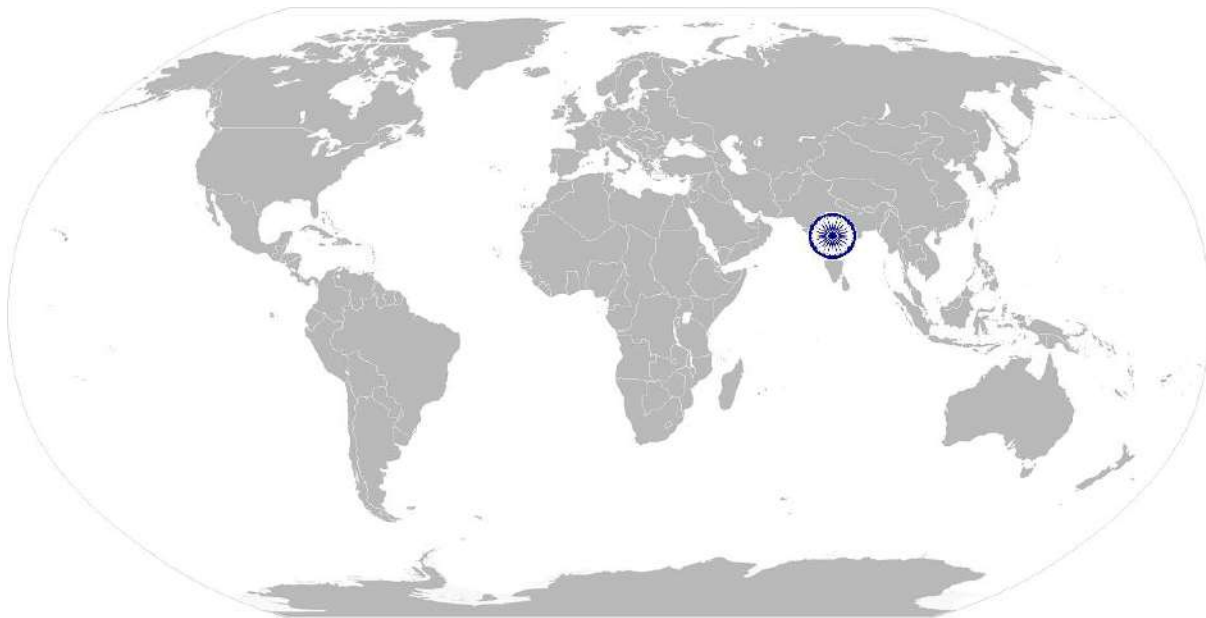


ISC/N0822

Carry out the assigned pipe line operation

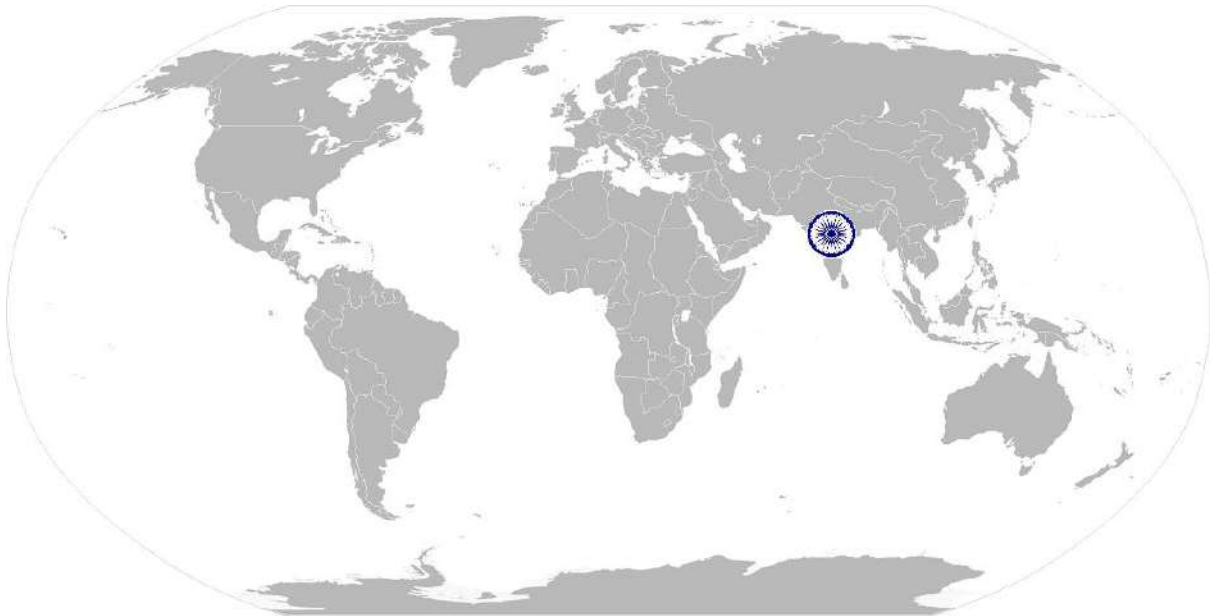
## NOS Version Control

<b>NOS Code</b>	<b>ISC/N0822</b>		
<b>Credits(NSQF)</b>	<b>TBD</b>	<b>Version number</b>	<b>1.0</b>
<b>Industry</b>	<b>Iron and steel</b>	<b>Drafted on</b>	<b>08/09/2014</b>
<b>Industry Sub-sector</b>	<b>Mechanical Maintenance</b>	<b>Last reviewed on</b>	<b>25/03/2015</b>
<b>Occupation</b>	<b>Fitter</b>	<b>Next review date</b>	<b>25/03/2016</b>





# National Occupational Standards



## Overview

This unit is about carrying out the operations that are specific to a pipe line fitter.



ISC/N0823

Activities specific to pipe line operation

National Occupational Standard

<b>Unit Code</b>	<b>ISC / N0823</b>
<b>Unit Title (Task)</b>	<b>Activities specific to pipe line operation</b>
<b>Description</b>	This unit is about carrying out the operations that are specific to a pipe line fitter.
<b>Scope</b>	<p>This unit/task covers the following:</p> <ul style="list-style-type: none"> <li>• Ensure the correctly colour coded pipes are used</li> <li>• Fabrication of pipe line</li> </ul>
<b>Performance Criteria (PC) w.r.t. the Scope</b>	
<b>Element</b>	<b>Performance Criteria</b>
<b>Ensure the correctly colour coded pipes are used</b>	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. Understand the colour coding system of pipes            PC2. Identify which colour pipe is used with which media (water line, gas line, steam line, etc.)            PC3. Correctly use the pipes in the given media            PC4. Rectify any defects in the pipe line system            PC5. Test the pipeline and ensure fitness            PC6. Report to the supervisor in case of any problem that has to be escalated</p>
<b>Fabrication of Pipe Line</b>	<p>PC7. Understand the process energy isolation for the pipe line            PC8. Understand layout of the pipe line circuit            PC9. Handle hazardous waste of the pipe line</p>
<b>Element</b>	<b>Knowledge and Understanding</b>
<b>A. Organisational Context</b> (Knowledge of the Company/ Organisation and its processes)	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. Quality and damage checks to be done and importance of the same            KA2. Risk and impact of not following defined procedures/work instructions            KA3. Escalation matrix for reporting identified issues</p>
<b>B. Technical Knowledge</b>	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. Piping colour codes along with relevant media and connected safety aspects            KB2. Farvel system for automatic grease line            KB3. Implication of working on high pressure water line/gas line/steam line/oxygen line etc.            KB4. Pressure testing to ensure the pipe line if leak proof            KB5. Checks that need to be made to ensure that equipment is safe and ready to use            KB6. Limits, fits and tolerances            KB7. Nature of fluid / gas being carried through pipeline            KB8. Isolating units through valves, blanks, liquid seals etc.</p>
<b>Skills (S) [Optional]</b>	
<b>Element</b>	<b>Skills</b>
<b>A. Core Skills/ Generic Skills</b>	<b>Writing Skills</b>
	<p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. Construct simple sentences and express ideas clearly through written</p>



ISC/N0823

Activities specific to pipe line operation

	communication SA2. Fill up appropriate technical forms, process charts, activity logs in required format of the company
	<b>Reading Skills</b>
	The user/individual on the job needs to know and understand how to: SA3. Read and interpret engineering and machine drawings SA4. Read and understand manuals, health and safety instructions, memos, reports, job cards, etc.
	<b>Oral Communication (Listening and Speaking skills)</b>
	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 any queries SA7. Communicate with supervisor SA8. Communicate with team members
<b>B. Professional Skills</b>	<b>Decision Making</b>
	N.A.
	<b>Plan and Organize</b>
	N.A.
	<b>Customer Centricity</b>
	N.A.
	<b>Problem Solving</b>
	N.A.
	<b>Analytical Thinking</b>
	The user/individual on the job needs to know and understand how to: SB1. Diagnose common problems in the tools based on visual inspection, sound, temperature etc. SB2. Suggest improvements(if any) in assembly process based on experience
<b>Critical Thinking</b>	
N.A.	

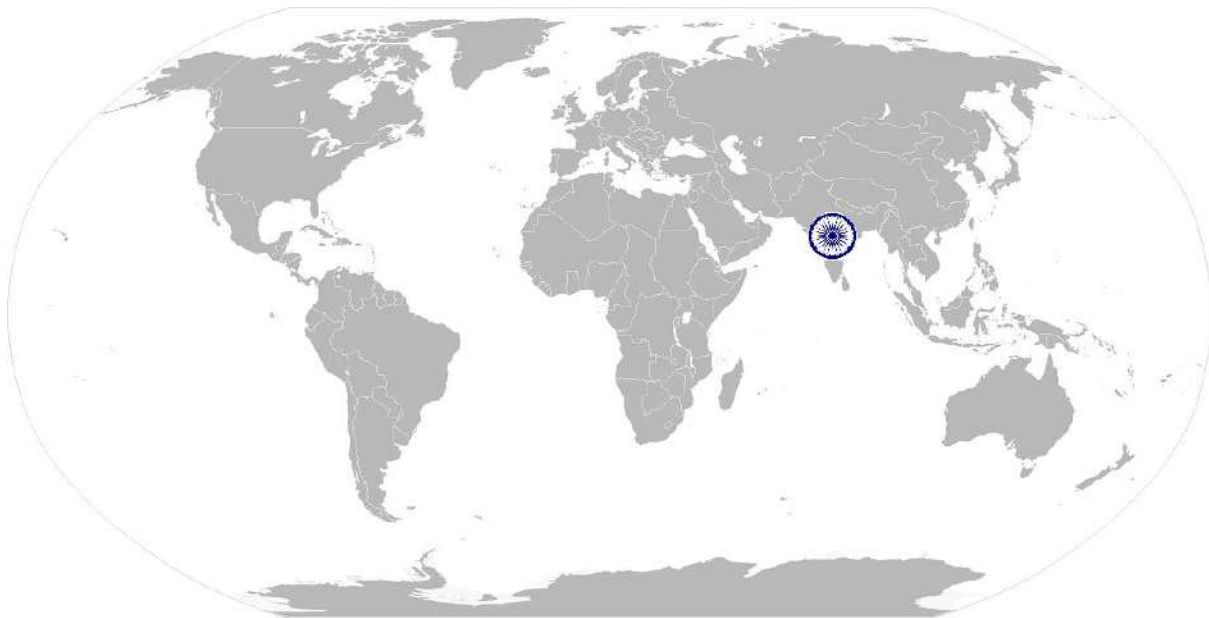


ISC/N0823

Activities specific to pipe line operation

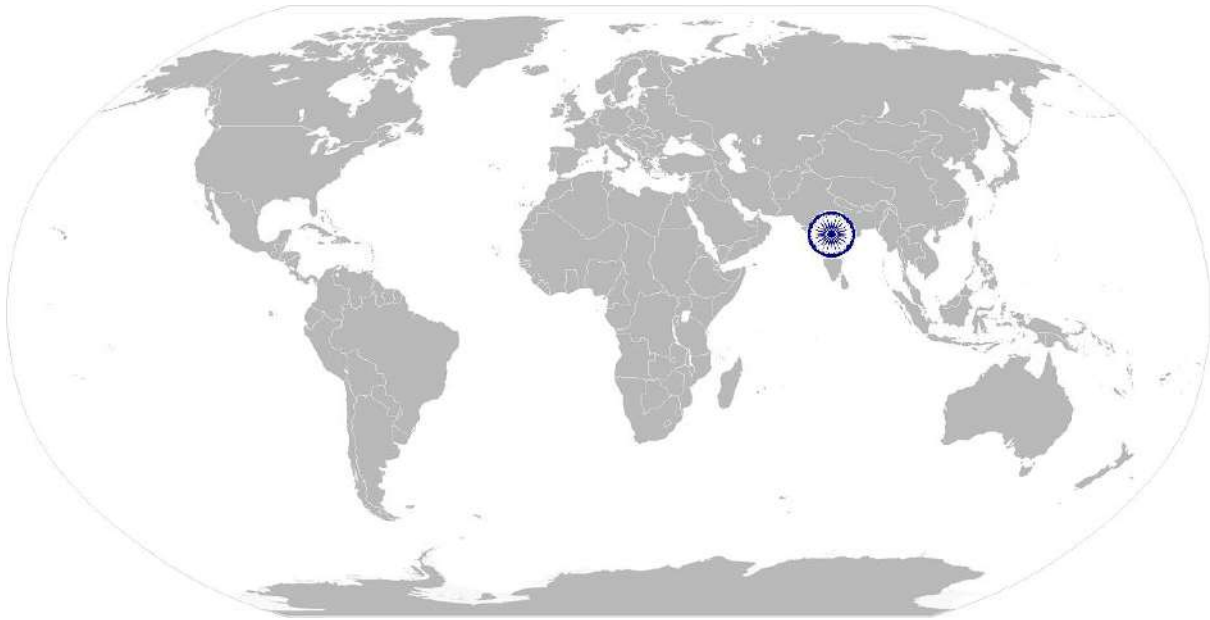
### **NOS Version Control**

NOS Code	ISC/N0823		
Credits(NSQF)	TBD	Version number	1.0
Industry	Iron and steel	Drafted on	08/09/2014
Industry Sub-sector	Mechanical Maintenance	Last reviewed on	25/03/2015
Occupation	Fitter	Next review date	25/03/2016





# 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.

ISC/N0008

Use basic health and safety practices at the workplace

National Occupational Standard	<b>Unit Code</b>	ISC/N0008
	<b>Unit Title (Task)</b>	Use basic health and safety practices at the work place
	<b>Description</b>	<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>
	<b>Scope</b>	<p>This unit/task covers the following:</p> <ul style="list-style-type: none"> <li>• Health and safety procedures</li> <li>• Fire safety procedures</li> <li>• Emergencies, rescue and first aid procedures</li> </ul>
	<b>Performance Criteria (PC) w.r.t. the Scope</b>	
<b>Element</b>	<b>Performance Criteria</b>	
<b>Health and safety procedures</b>	<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"> <li>• Leather or asbestos gloves</li> <li>• Flame proof aprons</li> <li>• Flame proof overalls buttoned to neck</li> <li>• Cuff less (without folds) trousers</li> <li>• Reinforced footwear</li> <li>• Helmets/hard hats</li> <li>• Cap and shoulder covers</li> <li>• Ear defenders/plugs</li> <li>• Safety boots</li> <li>• Knee pads</li> <li>• Particle masks</li> <li>• Glasses/gloves/visors</li> </ul> <p>Equipment includes:</p> <ul style="list-style-type: none"> <li>• Hand shields</li> <li>• Machine guards</li> <li>• Residual current devices</li> <li>• Shields</li> <li>• Dust sheets</li> <li>• Respirator</li> </ul> <p>PC2. State the name and location of people responsible for health and safety in the workplace</p> <p>Various areas are listed below:</p> <ul style="list-style-type: none"> <li>• On chemical containers</li> <li>• Equipment</li> <li>• Packages</li> <li>• Inside buildings</li> <li>• Open areas, public places etc.</li> </ul>	

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Use basic health and safety practices at the workplace

	<p>PC3. State the names and location of documents that refer to health and safety in the workplace</p> <p>PC4. Identify job-site hazardous work and state possible causes of risk or accident in the workplace</p> <p>Hazards include:</p> <ul style="list-style-type: none"><li>• Working with electrical and thermal tools and equipment</li><li>• Sharp edged and heavy tools</li><li>• Heated metals</li><li>• Oxyfuel and gas cylinders</li><li>• Welding radiation</li><li>• Surfaces: sharp, slippery, uneven, chipped, broken, etc.</li><li>• Substances: chemicals, gas, oxy-fuel, fumes, dust, etc.</li><li>• 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.</li><li>• Electrical: power supply and points, loose and naked cables and wires, electrical machines and appliances, etc.</li></ul> <p>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</p> <p>Safe working practices include:</p> <ul style="list-style-type: none"><li>• Using protective clothing and equipment</li><li>• Putting up and reading safety signs</li><li>• Handle tools in the correct manner and store and maintain them properly</li><li>• Keep work area clear of clutter, spillage and unsafe object lying casually</li><li>• 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.</li><li>• Safe lifting and carrying practices</li><li>• Use equipment that is working properly and is well maintained</li><li>• Take due measures for safety while working in confined places, trenches or at heights, etc. Including safety harness, fall arrestors etc.</li></ul> <p>Methods are:</p> <ul style="list-style-type: none"><li>• Training in health and safety procedures</li><li>• Using health and safety procedures</li><li>• Use of equipment and working practices (such as safe carrying procedures)</li><li>• Safety notices, advice</li><li>• Instruction from colleagues and supervisors</li></ul> <p>PC6. State location of general health and safety equipment in the workplace</p> <p>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"><li>• Corrosion of metal components</li><li>• Deterioration</li><li>• Splits and cracks timber components</li></ul>
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ISC/N0008

Use basic health and safety practices at the workplace

	<ul style="list-style-type: none"> <li>• Imbalance</li> <li>• Loose rungs</li> <li>• Nuts or bolts, etc.</li> </ul> <p>Set up:</p> <ul style="list-style-type: none"> <li>• Firm/level base</li> <li>• Clip/lash down</li> <li>• Leaning at the correct angle, etc.</li> </ul> <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"> <li>• Clean/tidy work areas</li> <li>• Removal/disposal of waste products</li> <li>• Protect surfaces</li> </ul> <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><b>Fire safety procedures</b></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"> <li>• Sand</li> <li>• Water</li> <li>• Foam</li> <li>• Co2</li> <li>• Dry powder</li> </ul> <p>Fires:</p> <ul style="list-style-type: none"> <li>• Class A: Ordinary solid combustibles, e.g. wood, paper, cloth, plastic, charcoal etc.</li> <li>• Class B: Flammable liquids and gases, e.g. gasoline, propane, diesel fuel, tar, cooking oil and similar substances</li> <li>• 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)</li> <li>• Class D: Combustible metals such as magnesium, titanium, and sodium (these fires burn at extremely high temperatures and require special suppression agents)</li> </ul> <p>Causes of fires:</p> <ul style="list-style-type: none"> <li>• Heating of metal</li> <li>• Spontaneous ignition</li> <li>• Sparking,</li> <li>• Electrical heating</li> <li>• Loose fires (e.g. Smoking, welding, etc.)</li> <li>• Chemical fires, etc.</li> </ul> <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>

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Use basic health and safety practices at the workplace

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

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 :

- Fire extinguishers
- First aid equipment
- Safety instruments and clothing
- Safety installations, e.g. Fire exits, exhaust fans etc.

PC21. Perform and organize loss minimization or rescue activity during an accident in real or simulated environments

PC22. Administer first aid to victims in case of a heart attack or cardiac arrest due to electric shock, before the arrival of emergency services in real or simulated cases

PC23. Demonstrate the artificial respiration and the CPR Process

PC24. Participate in emergency procedures. Emergency procedures are:

- Raising alarm
- Safe/efficient evacuation
- Correct means of escape
- Correct assembly point
- Roll call
- Correct return to work

PC25. Complete a written accident/incident report or dictate a report to another person, and send report to person responsible

Incident Report should capture:

- Name
- Date/time of incident
- Date/time of report,
- Location
- Environment conditions
- Persons involved
- Sequence of events
- Injuries sustained
- Damage sustained
- Actions taken
- Witnesses
- Supervisor/manager notified

Documents:

- Fire notices
- Accident reports
- Safety instructions for equipment and procedures
- Company notices and documents
- Legal documents (e.g. Government notices)

Job titles:

- Health and safety officer





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Use basic health and safety practices at the workplace

	<ul style="list-style-type: none"> <li>• First aid officer</li> <li>• Fire officer</li> </ul> <p>PC26. Demonstrate correct method to move injured people and others during an emergency</p>
Element	Knowledge and Understanding
<p><b>A. Organisational Context</b> (Knowledge of the Company/ Organisation and its processes)</p>	<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>
<p><b>B. Technical Knowledge</b></p>	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. Meaning of “hazards” and “risks”</p> <p>KB2. Health and safety hazards commonly present in the work environment and related precautions</p> <p>KB3. Possible causes of risk, hazard or accident in the workplace and why risk and/or accidents are possible</p> <p>KB4. Activities and causes of risk and accident</p> <p>KB5. Methods of accident prevention</p> <p>KB6. Safe working practices when working with tools and machines</p> <p>KB7. Safe working practices while working at various hazardous sites</p> <p>KB8. Where to find all the general health and safety equipment in the workplace</p> <p>KB9. Various dangers associated with the use of electrical equipment</p> <p>KB10. Preventative and remedial actions to be taken in the case of exposure to toxic materials.</p> <ul style="list-style-type: none"> <li>• Exposure: ingested, contact with skin, inhaled</li> <li>• Preventative action: ventilation, masks, protective clothing/equipment</li> <li>• Remedial action: immediate first aid, report to supervisor</li> <li>• Materials: solvents, flux, lead</li> </ul> <p>KB11. Importance of using protective clothing/equipment while working</p> <p>KB12. Precautionary activities to prevent the fire accident</p> <p>Activities and causes:</p> <ul style="list-style-type: none"> <li>• Physical actions</li> <li>• Reading</li> <li>• Listening to and giving instructions</li> <li>• Inattention</li> <li>• Sickness and incapacity (e.g. Drunkenness)</li> <li>• Health hazards (e.g. Untreated injuries and contagious illness)</li> </ul> <p>KB13. Various causes of fire</p> <p>KB14. Techniques of using the different fire extinguishers</p> <p>KB15. Different methods of extinguishing fire</p> <p>KB16. Rescue techniques applied during a fire hazard</p> <p>KB17. Various types of safety signs and what they mean</p> <p>KB18. Appropriate basic first aid treatment relevant to the condition e.g. Shock,</p>



ISC/N0008

Use basic health and safety practices at the workplace

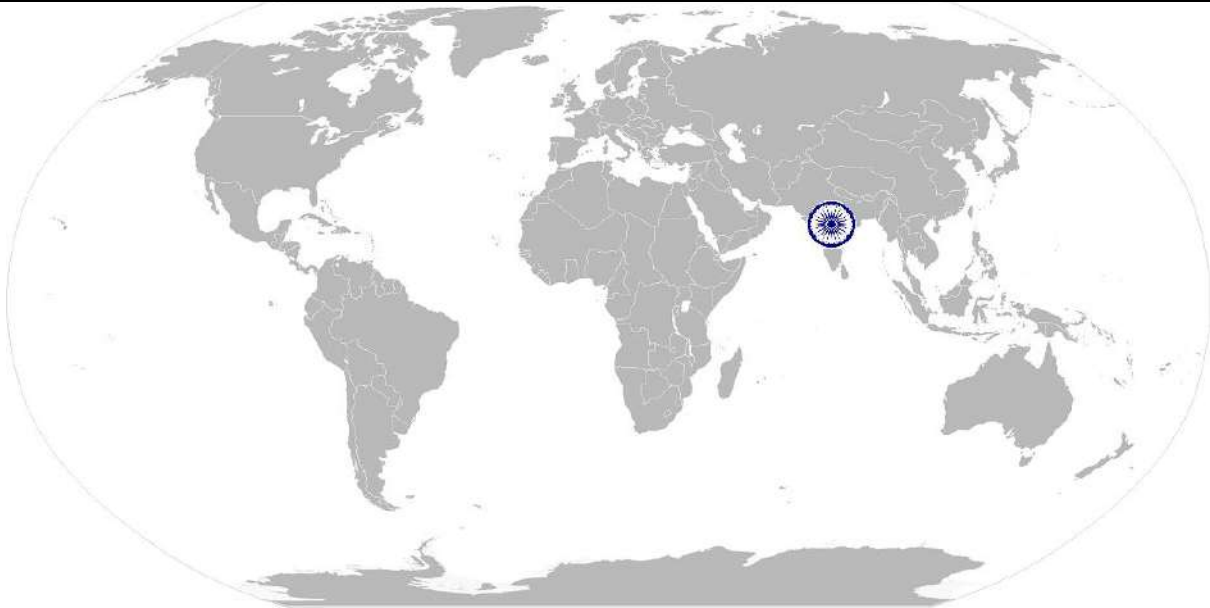
	<p>electrical shock, bleeding, breaks to bones, minor burns, resuscitation, poisoning, eye injuries</p> <p>KB19. Content of written accident report</p> <p>KB20. Potential injuries and ill health associated with incorrect manual handling</p> <p>KB21. Safe lifting and carrying practices</p> <p>KB22. Personal safety, health and dignity issues relating to the movement of a person by others</p> <p>KB23. Potential impact to a person who is moved incorrectly</p>
<b>Skills (S) [Optional]</b>	
<b>Element</b>	<b>Skills</b>
<b>A. Core Skills/ Generic Skills</b>	<b>Writing skills</b>
	The user/individual on the job needs to know and understand how to: SA1. Write notes in log books etc.
	<b>Reading skills</b>
	The user/individual on the job needs to know and understand how to: SA2. Read and comprehend basic content to read instructions, labels, charts, signage's
	<b>Oral Communication (Listening and Speaking skills)</b>
The user/individual on the job needs to know and understand how to: SA3. Interact with co-workers in order to clarify instructions and other work related issues SA4. Communicate with co-workers to share and receive information, instruction SA5. Share & receive information from Supervisors	
<b>A. Professional Skills</b>	<b>Decision Making</b>
	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
	<b>Plan and Organize</b>
	The user/individual on the job needs to know and understand how to: SB2. Plan and organize their own work schedule, work area, tools, equipment and materials to maintain decorum and for improved productivity
	<b>Customer Centricity</b>
	The user/individual on the job needs to know and understand how to: SB3. Remain congenial while discussing and debating issues with co-workers SB4. Follow appropriate protocols for communication based on situation, hierarchy, organizational culture and practice SB5. Ask for, provide and receive required assistance where possible to ensure achievement of work related objectives SB6. Thank co-workers for any assistance received SB7. Offer appropriate respect based on mutuality and respect for fellow workmanship and authority
	<b>Problem Solving</b>
The user/individual on the job needs to know and understand how to:	



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Use basic health and safety practices at the workplace

	SB8. Think through the problem, evaluate the possible solution(s) and suggest an optimum /best possible solution(s)
	SB9. Identify immediate or temporary solutions to resolve delays
	SB10. Identify sources of support that can be availed of for problem solving for various kind of problems
	SB11. Seek appropriate assistance from other sources to resolve problems
	SB12. Report problems that you cannot resolve to appropriate authority
	<b>Analytical Thinking</b>
	The user/individual on the job needs to know and understand how to:
	SB13. Identify cause and effect relations in their area of work
	SB14. Use cause and effect relations to anticipate potential problems and their solution
	<b>Critical Thinking</b>
	<b>N.A</b>



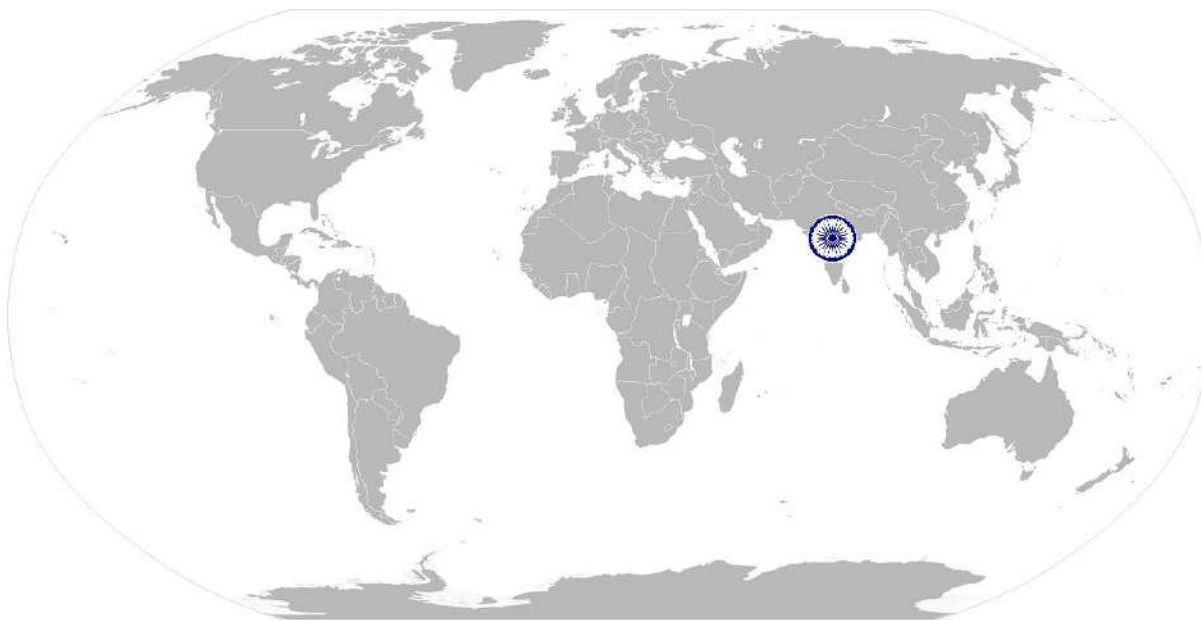


ISC/N0008

Use basic health and safety practices at the workplace

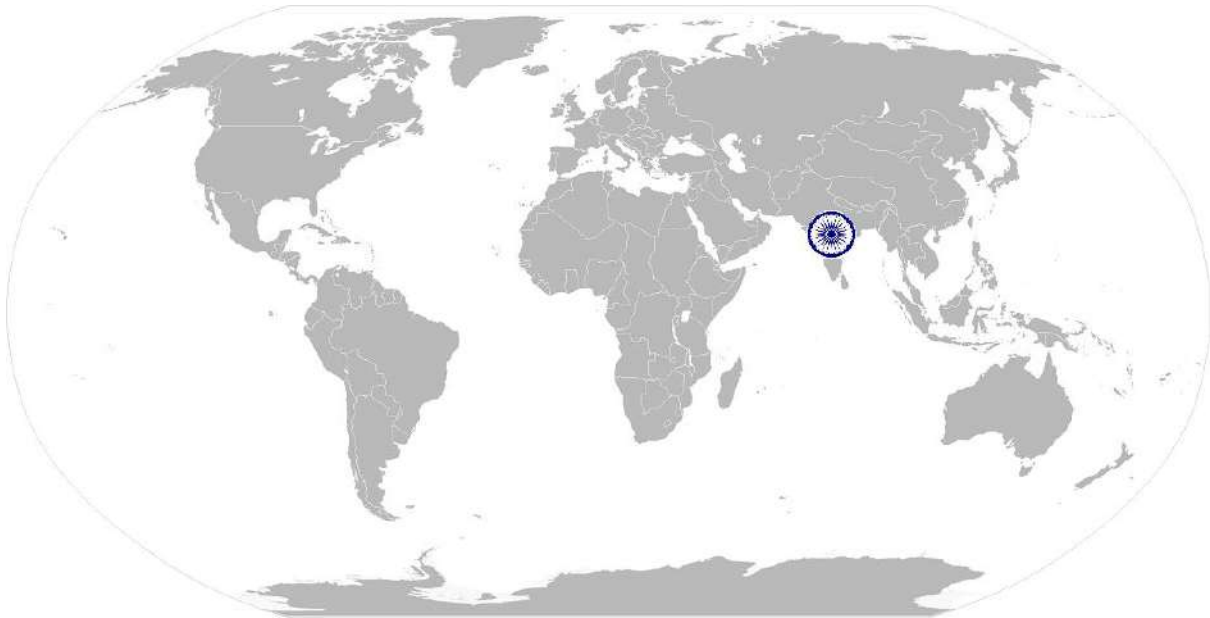
### **NOS Version Control**

<b>NOS Code</b>	<b>ISC/N0008</b>		
<b>Credits(NSQF)</b>	<b>TBD</b>	<b>Version number</b>	<b>1.0</b>
<b>Industry</b>	<b>Iron and steel</b>	<b>Drafted on</b>	<b>08/09/2014</b>
<b>Industry Sub-sector</b>	<b>All departments</b>	<b>Last reviewed on</b>	<b>25/03/2015</b>
<b>Occupation</b>	<b>Fitter</b>	<b>Next review date</b>	<b>25/03/2016</b>





# National Occupational Standards



## Overview

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



ISC/N0009

Works effectively with others

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





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Works effectively with others

	<p>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>
<b>Skills (S) [Optional]</b>	
<b>Element</b>	<b>Skills</b>
<b>A. Core Skills/ Generic Skills</b>	<b>Writing skills</b>
	The user/individual on the job needs to know and understand how to: SA1. Write notes in log books etc.
	<b>Reading skills</b>
	The user/individual on the job needs to know and understand how to: SA2. Read and comprehend basic content to read instructions, labels, charts, signage's
	<b>Oral Communication (Listening and Speaking skills)</b>
The user/individual on the job needs to know and understand how to: SA3. Interact with co-workers in order to clarify instructions and other work related issues SA4. Communicate with co-workers to share and receive information, instruction SA5. Share & receive information from Supervisors	
<b>B. Professional Skills</b>	<b>Decision Making</b>
	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
	<b>Plan and Organize</b>
	The user/individual on the job needs to know and understand how to: SB2. Plan and organize their own work schedule, work area, tools, equipment and materials to maintain decorum and for improved productivity
	<b>Customer Centricity</b>
The user/individual on the job needs to know and understand how to: SB3. Remain congenial while discussing and debating issues with co-workers SB4. Follow appropriate protocols for communication based on situation, hierarchy, organizational culture and practice	



ISC/N0009

Works effectively with others

	SB5. Ask for, provide and receive required assistance where possible to ensure achievement of work related objectives SB6. Thank co-workers for any assistance received SB7. Offer appropriate respect based on mutuality and respect for fellow workmanship and authority
	<b>Problem Solving</b>
	The user/individual on the job needs to know and understand how to: SB8. Think through the problem, evaluate the possible solution(s) and suggest an optimum /best possible solution(s) SB9. Identify immediate or temporary solutions to resolve delays SB10. Identify sources of support that can be availed of for problem solving for various kind of problems SB11. Seek appropriate assistance from other sources to resolve problems SB12. Report problems that you cannot resolve to appropriate authority
	<b>Analytical Thinking</b>
	The user/individual on the job needs to know and understand how to: SB13. Identify cause and effect relations in their area of work SB14. Use cause and effect relations to anticipate potential problems and their solution
	<b>Critical Thinking</b>
<b>N.A</b>	



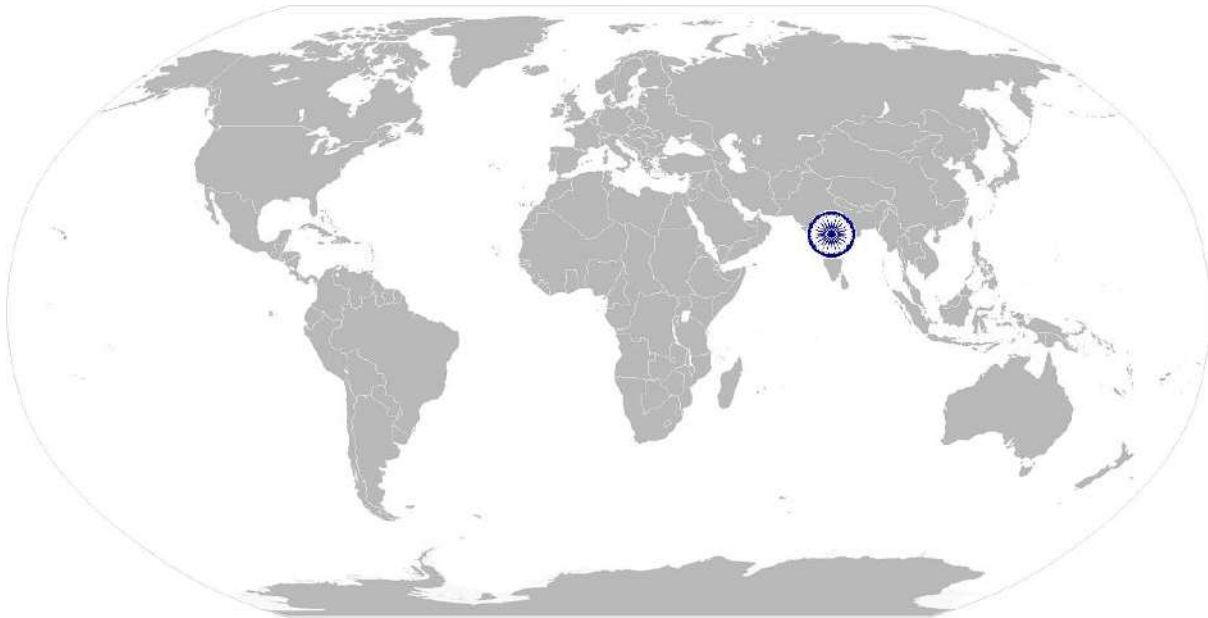


ISC/N0009

Works effectively with others

### **NOS Version Control**

NOS Code		ISC/N0009	
Credits(NSQF)	TBD	Version number	1.0
Industry	Iron and steel	Drafted on	08/09/2014
Industry Sub-sector	All departments	Last reviewed on	25/03/2015
Occupation	Fitter	Next review date	25/03/2016





**CRITERIA FOR ASSESSMENT OF TRAINEES**

**Job Role:** Iron & Steel-Pipe Line Fitter

**Qualification Pack:** ISC/Q0813

**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 70% 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.

Assessment outcomes	Assessment Criteria for outcomes	Marks Allocation			
		Total Marks (1000)	Out Of	Theory	Skill Practical
ISC/N0820: Understand the assigned pipe line job	PC1. Interpret the pipe line layout drawing and understand the pipe line job requirements	<b>150</b>	10	5	5
	PC2. Plan, as appropriate to carry out the pipe line job		10	5	5
	PC3. Understand the layout drawing with necessary fittings		10	5	5
	PC4. Understand the specification of pipe line to be used for the job		15	5	10
	PC5. Understand the sequence of activities to complete the pipe line circuit as per lay out drawing		15	5	10
	PC6. Read and interpret the pipe line circuit drawings and ensure correct selection of fittings as per specification for maintaining the inclination and layout		15	5	10



	PC7. Identify any clarifications that he/she wants to seek with respect to the pipe line layout/circuit drawing		15	5	10
	PC8. Recognize whom to contact for clarifications on the piping design		15	5	10
	PC9. Escalate the concern to the supervisor or shift-in-charge, if needed		15	5	10
	PC10. Identify tools, tackles & equipment required to perform the operation		10	5	5
	PC11. Ask helper to carry tools and pipe fittings required to the desired work site		10	5	5
	PC12. Report to stores / supervisor in case of non-availability of tools & tackles, pipe and pipe line fittings or stock-out		10	5	5
		<b>Total</b>	<b>150</b>	<b>60</b>	<b>90</b>
ISC/N0821: Prepare for assigned pipe line job operation	PC1. Reach the site with desired tools, tackles and fittings/hardware required for the job	<b>100</b>	5	0	5
	PC2. Identify the job execution methodology		15	5	10
	PC3. Prepare the list of spares and fittings required for completion of job		15	5	10
	PC4. Ensure that desired tools and tackles match the job specifications		20	5	15
	PC5. Ensure tools, tackles and fittings required for assembly are free from physical damage and ready to use		15	5	10
	PC6. Report damaged / defective pipe line as per the escalation Matrix		15	5	10
	PC7. Prepare QAP process, fabricate, repair, replacement process of pipe line		15	5	10
		<b>Total</b>	<b>100</b>	<b>30</b>	<b>70</b>
ISC/N0822: Carry out the assigned pipe line operation	PC1. Dismantle the pipe line circuit, as needed	<b>350</b>	15	5	10
	PC2. Correct the defect in the pipe line circuit and replace the defective part		30	5	25
	PC3. Assemble the parts according to the pipe line drawings, as required		30	5	25
	PC4. Fasten mechanical components/ subassemblies together using pipe, pipe fittings using hand/ power tools		30	5	25



	PC5. Set and adjust the pipe line / fittings using pipe spanner and hand tools		25	5	20
	PC6. Re assemble the pipe line with fittings post correcting the defect		25	5	20
	PC7. Develop repair process/carry out repair process as per SOP		25	5	20
	PC8. Handle hazardous material as per SOP		20	5	15
	PC9. Fabrication of pipeline as per circuit drawing		25	5	20
	PC10. Ensure the layout of pipe lines as per specified circuit drawings		30	5	25
	PC11. Check proper clamping to ensure the rigidity		25	5	20
	PC12. Pressure test of pipe line to ensure it is leak proof before handover		25	5	20
	PC13. Record the test results in the prescribed format of the organization		15	5	10
	PC14. Ensure all activities are complete according to checklist		15	5	10
	PC15. Communicate to supervisor on completion of given job in case of any deviations from checklist		15	5	10
		<b>Total</b>	<b>350</b>	<b>75</b>	<b>275</b>
ISC/N0023: Activities specific to pipe line operation	PC1. Understand the colour coding system of pipes	<b>150</b>	15	5	10
	PC2. Identify which colour pipe is used with which media (water line, gas line, steam line, etc.)		20	5	15
	PC3. Correctly use the pipes in the given media		20	5	15
	PC4. Rectify any defects in the pipe line system		20	5	15
	PC5. Test the pipeline and ensure fitness		20	5	15
	PC6. Report to the supervisor in case of any problem that has to be escalated		5	0	5
	PC7. Understand the process energy isolation for the pipe line		20	5	15
	PC8. Understand layout of the pipe line circuit		15	5	10



	PC9. Handle hazardous waste of the pipe line		15	5	10
		<b>Total</b>	<b>150</b>	<b>40</b>	<b>110</b>
ISC/N0008: Use basic health and safety practices at the workplace	PC1. Use protective clothing/equipment for specific tasks and work conditions	<b>150</b>	10	5	5
	PC2. State the name and location of people responsible for health and safety in the workplace		4	0	4
	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		10	5	5
	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		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		4	0	4
	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		10	5	5
	PC14. Demonstrate rescue techniques applied during fire hazard		10	5	5
	PC15. Demonstrate good housekeeping in order to prevent fire hazards		0	0	0
	PC16. Demonstrate the correct use of a fire extinguisher		5	0	5



	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		4	0	4
	PC25. Complete a written accident/incident report or dictate a report to another person, and send report to person responsible		10	5	5
	PC26. Demonstrate correct method to move injured people and others during an emergency		1	0	1
		<b>Total</b>	<b>150</b>	<b>45</b>	<b>105</b>
ISC/N0009: Work effectively with others	PC1. Accurately receive information and instructions from the supervisor and fellow workers, getting clarification where required	<b>100</b>	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
<b>Total</b>	<b>100</b>	<b>30</b>	<b>70</b>