

QUALIFICATIONS PACK - OCCUPATIONAL STANDARDS FOR CAPITAL GOODS INDUSTRY

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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

Introduction

Qualifications Pack: Heat Treatment Operator

SECTOR: CAPITAL GOODS

SUB-SECTOR:

- | | |
|------------------------------------|-----------------------------------|
| 1. Machine Tools | 5. Process Plant Machinery |
| 2. Tools Dies and Press Tools | 6. Electrical and Power Machinery |
| 3. Plastic Manufacturing Machinery | 7. Light Engineering |
| 4. Textile Manufacturing Machinery | |

OCCUPATION: Material Preparation

REFERENCE ID: CSC/ Q 0114

Heat Treatment Operator: Perform heat treatment operations on ferrous & non-ferrous metals and alloys using a variety of equipment.

Brief Job Description: It involves applying pre-heat treatment procedures, carrying out heat treatments such as flame hardening, case hardening, hardening, carburizing, tempering, annealing and normalizing, as applicable. It also involves inspecting the components and correcting faults.

Personal Attributes: Basic communication, numerical and computational abilities. Openness to learning, ability to plan and organize own work and 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

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Job Details

Qualifications Pack Code	CSC/ Q 0114		
Job Role	Heat Treatment Operator		
Credits NSQF [OPTIONAL]		Version number	2.0
Sector	CAPITAL GOODS	Drafted on	10/04/14
Sub-sector	<ol style="list-style-type: none"> 1. Machine Tools 2. Tools Dies And Press Tools 3. Plastic Manufacturing Machinery 4. Textile Manufacturing Machinery 5. Process Plant Machinery 6. Electrical and Power Machinery 7. Light Engineering 	Last reviewed on	
Occupation	MATERIAL PREPARATION	Next review date	15/04/14

Job Role	Heat Treatment Operator
Role Description	Perform heat treatment operations on ferrous & non-ferrous metals and alloys using a variety of equipment.
NSQF level	L2
Minimum Educational Qualifications*	8 th Standard
Maximum Educational Qualifications*	
Training (Suggested but not mandatory)	No Previous Training Required
Experience	No Previous Experience Required
Applicable National Occupational Standards (NOS)	<p>Compulsory:</p> <p>CSC/ N 0114 Perform heat treatment operations on ferrous & non-ferrous metals and alloys using a variety of equipment.</p> <p>CSC/ N 0135 Use basic health and safety practices at the workplace</p> <p>CSC/ N 0136 Work effectively with others</p> <p>Optional:</p> <p>1. Nil</p>
Performance Criteria	As described in the relevant OS units

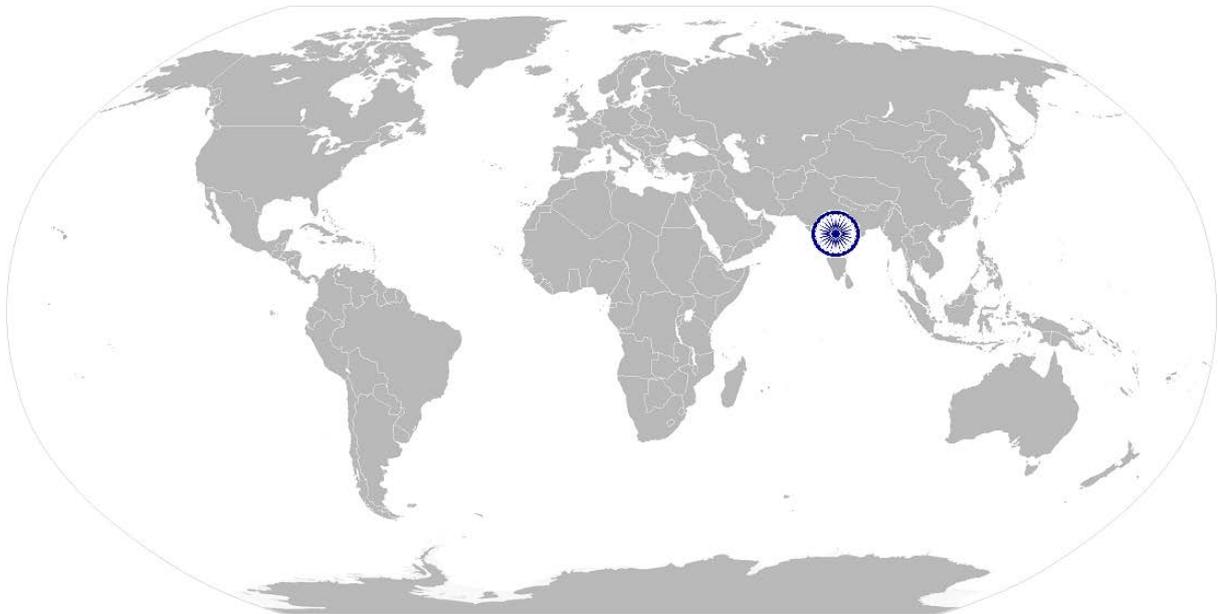
Definitions	Keywords /Terms	Description
	Core Skills/Generic Skills	Core Skills or Generic Skills are a group of skills that are key to learning and working in today's world. These skills are typically needed in any work environment. In the context of the NOS, these include communication related skills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

Acronyms

Keywords /Terms	Description
CO2	Carbon dioxide
CPR	Cardiac Pulmonary Resuscitation
PPE	Persnal Protective Equipment

CSC/ N 0114: Perform heat treatment operations on ferrous & non-ferrous metals and alloys using a variety of equipment

National Occupational Standard



Overview

This unit covers the competencies required for performing heat treatment operations on ferrous, non-ferrous metals and alloys using a variety of equipment.

CSC/ N 0114: Perform heat treatment operations on ferrous & non-ferrous metals and alloys using a variety of equipment

National Occupational Standard	Unit Code	CSC/ N 0114
	Unit Title (Task)	Perform heat treatment operations on ferrous, non-ferrous metals and alloys using a variety of equipment
	Description	<p>This unit covers the competencies required for performing heat treatment operations on ferrous, non-ferrous metals and alloys using a variety of equipment. The applications for it would include cast metal products, machine tooling, and forged and machined components.</p> <p>This involves preparing for the heat treatment activities by obtaining all the necessary job instructions, materials, tools and methods to suit work requirements; preparing the tools and equipment, applying heat treatment procedures, identifying imperfections, using measuring equipment, understanding processing hazards and finally carrying out heat treatment on the material with appropriate tools and process to match specifications. The heat treatment activities include the application of treatments such as flame hardening, case hardening, hardening, carburizing, tempering, annealing and normalizing, as applicable.</p> <p>It also involves inspecting the components after heat treatment operations and correcting faults to ensure that the job is completed as per the required specification.</p> <p>The candidate will be expected to perform as per instructions given, take responsibility for own actions and for the quality and accuracy of the work produced.</p> <p>The candidate will have knowledge and understanding the preparation and heat treatment techniques used, and their application, the equipment, materials and consumables, heat treatment operations and procedures; the importance of quality and accuracy in the work and the safety precautions required.</p> <p>The candidate will be required to demonstrate safe working practices throughout, and will understand responsibility they owe to themselves and others in the workplace.</p>
Scope	<p>This unit/task covers the following:</p> <p>Sources for information of job specifications are:</p> <ul style="list-style-type: none"> • job instructions • drawing instructions • material specifications • reference tables/charts • national, international and organizational standards • planning documentation • quality control documents • operation sheets • process specifications <p>Types of job specification documents are:</p> <ul style="list-style-type: none"> • detailed component drawings • approved sketches • illustrations 	

CSC/ N 0114: Perform heat treatment operations on ferrous & non-ferrous metals and alloys using a variety of equipment

- schematic diagrams
- fabrication drawings
- casting drawings
- operational diagrams
- contractual specifications

Job requirements to be established are:

- materials or components required
- dimensions
- tolerances
- surface texture requirements
- inspection requirements
- operations required
- sequence and procedures
- shape or profiles

Activities done to prepare the materials for heat treatment are:

- cleaning the surface(eg. removing scale, oil and dirt)
- degreasing
- drying at the correct temperature
- masking the materials to contain the case hardening or carburising deposits
- polishing the material surface to be tempered using manual methods
- packing or coating the components with a carbon enriched material
- pre-heating before immersion into a salt bath
- pickling
- sand blasting

Activities done to prepare the tools and equipment for heat treatment are:

- setting furnace or salt bath controls to give the correct temperature
- the procedure for lighting and extinguishing the blacksmith's forge
- setting up gas torches
- ensuring that suitable tongs/handling/lifting devices are available

Range of Materials used are:

- ferrous metals: eg. carbon steels, stainless steels, cast iron, tool steel, hard metals
- non-ferrous metals: eg. bronze, bronze alloys, copper and copper alloys

Various heat treatment equipment and tools are:

- gas, electric, oil fired furnaces
- vacuum furnace
- muffle furnace
- induction heating
- kilns
- heated baths

CSC/ N 0114: Perform heat treatment operations on ferrous & non-ferrous metals and alloys using a variety of equipment

	<ul style="list-style-type: none"> • salt baths • gas torches • specialised tongs/tools and lifting equipment <p>Various quenching/cooling mediums are:</p> <ul style="list-style-type: none"> • fresh water • salt water • oil • air • sand • left in the furnace to cool <p>Hazards involved in heat treatment are:</p> <ul style="list-style-type: none"> • handling hot materials • using heat treatment solutions • fume inhalation • splashes from hot oil or liquids • working with fire and explosive mixtures
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
Working safely	<p>The user / individual on the job should be able to:</p> <p>PC1. comply with health and safety, environmental and other relevant regulations and guidelines at work and ensure process compliance</p> <p>PC2. adhere to procedures or systems in place for risk assessment, occupational standards, personal protective equipment (PPE) and other relevant occupational safety regulations</p> <p>PC3. work following laid down procedures and instructions</p> <p>PC4. ensure that all tools, equipment, power tool cables, extension leads are in a safe and usable condition and are kept at secured location</p> <p>PC5. ensure work area is clean and safe from hazards before and after the job is completed</p>
Preparing for performing heat treatment operations	<p>PC6. prepare and maintain the work area as per procedure or operation specification</p> <p>PC7. obtain production and consumables materials required for performing heat treatment operations as per specifications</p> <p>PC8. obtain tools and equipment required for performing heat treatment operations as per specifications</p> <p>PC9. ensure that all measuring equipment are within calibration date and are approved for usage</p> <p>PC10. prepare the materials in readiness to receive the appropriate heat treatment</p> <p>PC11. prepare the components for the heat treatment activities as specified in the job specification</p>

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	<p>PC12. check that the heat treatment equipment is at satisfactory operating conditions</p>
<p>Carrying out heat treatment operations</p>	<p>PC13. carry out various kinds of heat processes eg. tempering heat treatment process, annealing heat treatment process, normalizing/stress relieving heat treatment process, carburising heat treatment process</p> <p>PC14. prepare furnace/forge or torch by lighting, using approved procedures</p> <p>PC15. cool the treated object using appropriate amounts of cooling medium so that it will not overheat or reach flash point</p> <p>PC16. ensure that components are loaded safely into the heat source/solution and are left for the required induction period</p> <p>PC17. remove the components safely and correctly from the heat source/solution</p> <p>PC18. carry out quenching/cooling of the components, using the appropriate medium and technique</p> <p>PC19. inspect the final heat treated component to check if it is as per specification and without defects</p> <p>PC20. deal promptly and effectively with problems within control, and seek help and guidance from the relevant people for problems that cannot be resolved</p> <p>PC21. shut down the heat treatment equipment to a safe condition on completion of the activities</p> <p>PC22. leave the work area in a safe and tidy condition on completion of the fitting activities</p> <p>PC23. refer unresolved job related problems to appropriate personnel for support</p> <p>PC24. monitor the problem and keep the supervisor informed about progress or any delays in resolving the problem</p>
<p>Knowledge and Understanding (K)</p>	
<p>A. Organizational Context (Knowledge of the company / organization and its processes)</p>	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. relevant legislation, standards, policies, and procedures followed in the company relevant to own employment and performance conditions</p> <p>KA2. relevant health and safety requirements applicable in the work place</p> <p>KA3. own job role and responsibilities and sources for information pertaining to employment terms, entitlements, job role and responsibilities</p> <p>KA4. reporting structure, inter-dependent functions, lines and procedures in the work area</p> <p>KA5. how to engage with specialists for support in order to resolve incidents and service requests</p> <p>KA6. importance of working in clean and safe environment practices and procedures</p> <p>KA7. relevant people and their responsibilities within the work area</p> <p>KA8. escalation matrix and procedures for reporting work and employment related issues</p>

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<p>B. Technical Knowledge</p>	<p>The user/individual on the job needs to know and understand:</p> <ul style="list-style-type: none"> KB1. kinds of common metals, metal alloys and non-metals KB2. common terminology used in heat treatment procedures KB3. media to be used in heat treatment for different types of material KB4. specific health and safety precautions which must be taken when carrying out heat treatment processes KB5. hazards associated with carrying out heat treatment processes and how they can be minimized KB6. importance of ensuring that fume extraction equipment is operating effectively, and that good housekeeping and fire prevention procedures are observed KB7. importance of following job instructions and defined heat treatment procedures KB8. material preparation methods and techniques to be undertaken, prior to applying the heat treatments KB9. heat treatment processes to be carried out, and the types of application for which they are best suited KB10. preparation of equipment for heat treatment activities KB11. methods used to hold/secure components in a heat treatment solution such as wires, hooks, jigs, etc. KB12. importance of monitoring equipment settings and process solutions during the heat treatment process KB13. correct temperature for heating of components as per the process being carried out and its importance KB14. quenching and cooling methods to be used KB15. need to maintain quenching oil at a temperature below its flash point KB16. problems that can occur with the heat treatment operations, and how these can be overcome KB17. procedures for handling components with imperfections/defects that cannot be removed/repared and how can they be minimized KB18. importance of leaving the work area and equipment in a safe and clean condition on completion of the heat treatment activities KB19. importance of reporting problems in a timely manner KB20. methods and parameters to check quality of the shaped components against required quality standards KB21. consumable related to heat treatment procedures KB22. calibration schedule of all equipment used in heat treatment procedure KB23. record keeping of the heat treatment job including tolerance levels KB24. importance of tools and equipment to be kept in a safe and usable condition KB25. personal protective equipment (PPE) and clothing that must be worn during the heat treatment activity and from where can it be obtained
<p>Skills (S) [Optional]</p>	
<p>A. Core Skills/</p>	<p>Communication</p>

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Generic Skills	The user/ individual on the job needs to know and understand how to: SA1. read and interpret information correctly from various job specification documents, manuals, health and safety instructions, memos, etc. applicable to the job in English and/or local language SA2. check and clarify task-related information SA3. liaise with appropriate authorities using correct protocol SA4. convey and share technical information clearly using appropriate language SA5. fill up appropriate technical forms, process charts, activity logs as per organizational format in English and/or local language SA6. communicate with people in respectful form and manner in line with organizational protocol
	Numerical and computational skills
	The user/individual on the job needs to know and understand how to: SA7. undertake numerical operations, and calculations/ formulae SA8. identify and draw various basic, compound and solid shapes as per dimensions given SA9. use appropriate measuring techniques and units of measurement SA10. use appropriate units and number systems to express degree of accuracy
	Learning
	The user/individual on the job needs to know and understand how to: SA11. maintain current knowledge of applicable standards, legislation, codes of practice and product/process developments SA12. participate in on-the-job and other learning, training and development interventions and assessment SA13. clarify task related information with appropriate personnel or technical adviser SA14. seek to improve and modify own work practices
B. Professional Skills	Problem Solving
	The user/individual on the job needs to know and understand how to: SB1. identify problems with work planning, procedures, output and behavior and their implications SB2. prioritize and plan for problem solving SB3. communicate problems appropriately to others SB4. identify sources of information and support for problem solving SB5. seek assistance and support from other sources to solve problems SB6. identify effective resolution techniques SB7. select and apply resolution techniques SB8. seek evidence for problem resolution
	Plan and Organize
	The user/individual on the job needs to know and understand how to: SB9. plan, prioritize and sequence work operations as per job requirements SB10. organize and analyze information relevant to work SB11. basic concepts of shop-floor work productivity including waste reduction, efficient material usage and optimization of time

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	Initiative and Enterprise
	<p>The user/individual on the job needs to know and understand:</p> <p>SB12. importance and impact of initiative and enterprise for achieving better results for self, others and organization</p> <p>SB13. how to undertake and express new ideas and initiatives to others</p> <p>SB14. modify work plan to overcome unforeseen difficulties or developments that occur as work progresses</p> <p>SB15. participate in improvement procedures including process, quality and internal/external customer/supplier relationships</p> <p>SB16. one's competencies can and should be applied in new and different situations and contexts to achieve more</p>
	Self-Management
	<p>The user/individual on the job needs to know and understand:</p> <p>SB17. importance of taking responsibility for own work outcomes</p> <p>SB18. importance of adherence to work timings, dress code and other organizational policies</p> <p>SB19. importance of following laid down rules, procedures, instructions and policies</p> <p>SB20. importance of exercising restraint while expressing dissent and during conflict situations</p> <p>SB21. how to avoid and manage distractions to be disciplined at work</p> <p>SB22. importance of time management for achieving better results</p>
	Teamwork
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB23. work in a team in order to achieve better results</p> <p>SB24. identify and clarify work roles within a team</p> <p>SB25. communicate and cooperate with others in the team</p> <p>SB26. seek assistance from fellow team members</p>

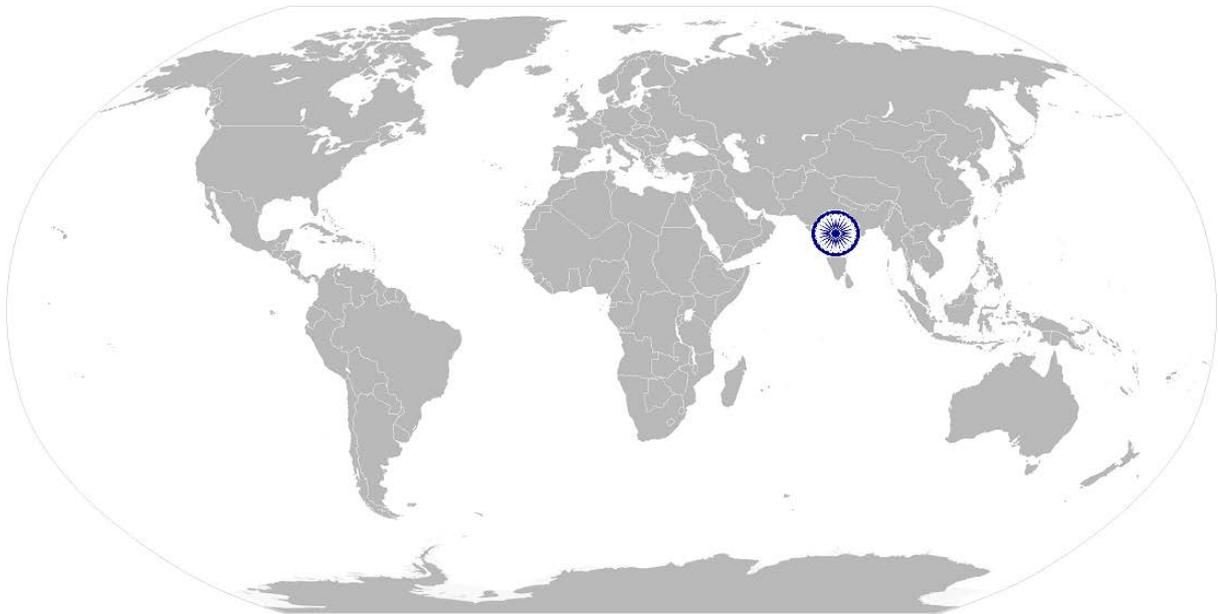
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NOS Version Control

NOS Code	CSC/ N 0114		
Credits NSQF [OPTIONAL]		Version number	2.0
Industry	Capital Goods	Drafted on	10/04/14
Industry Sub-sector	<ol style="list-style-type: none"> 1. Machine Tools 2. Tools Dies And Press Tools 3. Plastic Manufacturing Machinery 4. Textile Manufacturing Machinery 5. Process Plant Machinery 6. Electrical and Power Machinery 7. Light Engineering 	Last reviewed on	
		Next review date	15/04/14

CSC/ N 0135: Use basic health and safety practices at the workplace

National Occupational Standard



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.

CSC/ N 0135: Use basic health and safety practices at the workplace

National Occupational Standard

Unit Code	CSC / N 0135
Unit Title (Task)	Use basic health and safety practices at the workplace
Description	<p>This OS unit is about knowledge and practices relating to health, safety and security that candidates need to use in the workplace. It covers responsibilities towards self, others, assets and the environment.</p> <p>It includes understanding of risks and hazards in the workplace, along with common techniques to minimize risk, deal with accidents, emergencies, etc.</p> <p>It covers knowledge of fire safety, common first aid applications, safe practices and emergency procedures.</p>
Scope	<p>This unit/task covers the following:</p> <p>Protective clothing includes:</p> <ul style="list-style-type: none"> • leather or asbestos gloves • flame proof aprons • flame proof overalls buttoned to neck • cuffless (without folds) trousers • reinforced footwear • helmets/hard hats • cap and shoulder covers • ear defenders/plugs • safety boots • knee pads • particle masks • glasses/goggles/visors <p>Equipment includes:</p> <ul style="list-style-type: none"> • hand shields • machine guards • residual current devices • shields • dust sheets • respirator <p>Hazards include:</p> <ul style="list-style-type: none"> • 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 

CSC/ N 0135: Use basic health and safety practices at the workplace

	<p>shelves and packages, etc.</p> <ul style="list-style-type: none"> • Electrical: power supply and points, loose and naked cables and wires, electrical machines and appliances, etc. <p>Safe working practices include:</p> <ul style="list-style-type: none"> • 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. <p>Methods are:</p> <ul style="list-style-type: none"> • training in health and safety procedures • using health and safety procedures • use of equipment and working practices (such as safe carrying procedures) • safety notices, advice • instruction from colleagues and supervisors <p>Faults include:</p> <ul style="list-style-type: none"> • corrosion of metal components • deterioration • splits and cracks timber components • imbalance • loose rungs • nuts or bolts, etc. <p>Ladders set up includes:</p> <ul style="list-style-type: none"> • firm/level base • clip/lash down • leaning at the correct angle, etc. <p>Good housekeeping practices include:</p> <ul style="list-style-type: none"> • clean/tidy work areas • removal/disposal of waste products • protect surfaces <p>Emergency procedures include:</p> <ul style="list-style-type: none"> • raising alarm • safe/efficient evacuation
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CSC/ N 0135: Use basic health and safety practices at the workplace

- correct means of escape
- correct assembly point
- roll call
- correct return to work

Various areas are:

- on chemical containers
- equipment
- packages
- inside buildings
- in open areas and public spaces, etc.

General health and safety equipment includes:

- fire extinguishers
- first aid equipment
- safety instruments and clothing
- safety installations, eg fire exits, exhaust fans

Incident Report includes details of:

- 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



Job titles include:

- health and safety officer
- first aid officer
- fire officer

Documents include:

- fire notices
- accident reports
- safety instructions for equipment and procedures
- company notices and documents
- legal documents (eg government notices)

Activities and causes include:

- physical actions
- reading

CSC/ N 0135: Use basic health and safety practices at the workplace

	<ul style="list-style-type: none"> • listening to and giving instructions • inattention • sickness and incapacity (such as drunkenness) • health hazards (such as untreated injuries and contagious illness) <p>Exposure to toxic materials could be by:</p> <ul style="list-style-type: none"> • exposure: ingested, contact with skin, inhaled • preventative action: ventilation, masks, protective clothing/equipment • remedial action: immediate first aid, report to supervisor • materials: solvents, flux, lead <p>Types of fires are:</p> <ul style="list-style-type: none"> • Class A: eg. ordinary solid combustibles, such as wood, paper, cloth, plastic, charcoal, etc. • Class B: flammable liquids and gases, such as gasoline, propane, diesel fuel, tar, cooking oil, and similar substances • Class C: eg. electrical equipment such as appliances, wiring, breaker panels, etc. (These categories of fires become Class A, B, and D fires when the electrical equipment that initiated the fire is no longer receiving electricity) • Class D: combustible metals such as magnesium, titanium, and sodium (These fires burn at extremely high temperatures and require special suppression agents) <p>Causes of fires are:</p> <ul style="list-style-type: none"> • heating of metal • spontaneous ignition • sparking • electrical heating • loose fires (smoking, welding, etc.) • chemical fires, etc. <p>Fire extinguishers use:</p> <ul style="list-style-type: none"> • sand • water • foam • CO₂ • dry powder
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
Health and safety	<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>PC2. state the name and location of people responsible for health and safety in the workplace.</p> <p>PC3. state the names and location of documents that refer to health and</p>

CSC/ N 0135: Use basic health and safety practices at the workplace

	<p>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>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>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>PC8. work safely in and around trenches, elevated places and confined areas</p> <p>PC9. lift heavy objects safely using correct procedures</p> <p>PC10. apply good housekeeping practices at all times</p> <p>PC11. identify common hazard signs displayed in various areas</p> <p>PC12. retrieve and/or point out documents that refer to health and safety in the workplace</p>
Fire safety	<p>The user/individual on the job should be able to:</p> <p>PC13. use the various appropriate fire extinguishers on different types of fires correctly</p> <p>PC14. demonstrate rescue techniques applied during fire hazard</p> <p>PC15. demonstrate good housekeeping in order to prevent fire hazards</p> <p>PC16. demonstrate the correct use of a fire extinguisher.</p>
Emergencies, rescue and first-aid procedures	<p>The user/individual on the job should be able to:</p> <p>PC17. demonstrate how to free a person from electrocution</p> <p>PC18. administer appropriate first aid to victims where required eg. in case of bleeding, burns, choking, electric shock, poisoning etc.</p> <p>PC19. demonstrate basic techniques of bandaging</p> <p>PC20. respond promptly and appropriately to an accident situation or medical emergency in real or simulated environments</p> <p>PC21. perform and organize loss minimization or rescue activity during an accident in real or simulated environments</p> <p>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</p> <p>PC23. demonstrate the artificial respiration and the CPR Process</p> <p>PC24. participate in emergency procedures</p> <p>PC25. complete a written accident/incident report or dictate a report to another person, and send report to person responsible</p> <p>PC26. demonstrate correct method to move injured people and others during an emergency</p>
Knowledge and Understanding (K)	

CSC/ N 0135: Use basic health and safety practices at the workplace

<p>A. Organizational Context (Knowledge of the company / organization and its processes)</p>	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. names (and job titles if applicable), and where to find, all the people responsible for health and safety in a workplace.</p> <p>KA2. names and location of documents that refer to health and safety in the workplace.</p>
<p>B. Technical Knowledge</p>	<p>The user/individual on the job needs to know and understand:</p> <p>KA3. meaning of “hazards” and “risks”</p> <p>KA4. health and safety hazards commonly present in the work environment and related precautions</p> <p>KA5. possible causes of risk, hazard or accident in the workplace and why risk and/or accidents are possible</p> <p>KA6. activities and causes of risk and accident</p> <p>KA7. methods of accident prevention</p> <p>KA8. safe working practices when working with tools and machines</p> <p>KA9. safe working practices while working at various hazardous sites</p> <p>KA10. where to find all the general health and safety equipment in the workplace</p> <p>KA11. various dangers associated with the use of electrical equipment</p> <p>KA12. preventative and remedial actions to be taken in the case of exposure to toxic materials</p> <p>KA13. importance of using protective clothing/equipment while working</p> <p>KA14. precautionary activities to prevent the fire accident</p> <p>KA15. various causes of fire</p> <p>KA16. techniques of using the different fire extinguishers</p> <p>KA17. different methods of extinguishing fire</p> <p>KA18. rescue techniques applied during a fire hazard</p> <p>KA19. various types of safety signs and what they mean</p> <p>KA20. appropriate basic first aid treatment relevant to the condition eg. shock, electrical shock, bleeding, breaks to bones, minor burns, resuscitation, poisoning, eye injuries</p> <p>KA21. content of written accident report</p> <p>KA22. potential injuries and ill health associated with incorrect manual handling</p> <p>KA23. safe lifting and carrying practices</p> <p>KA24. personal safety, health and dignity issues relating to the movement of a person by others.</p> <p>KA25. potential impact to a person who is moved incorrectly</p>
<p>Skills (S) [Optional]</p>	
<p>A. Core Skills/ Generic Skills</p>	<p>Reading and Writing Skills</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SA1. read and comprehend basic content to read labels, charts, signages</p> <p>SA2. read and comprehend basic English to read manuals of operations</p> <p>SA3. read and write an accident/incident report in local language or English</p>

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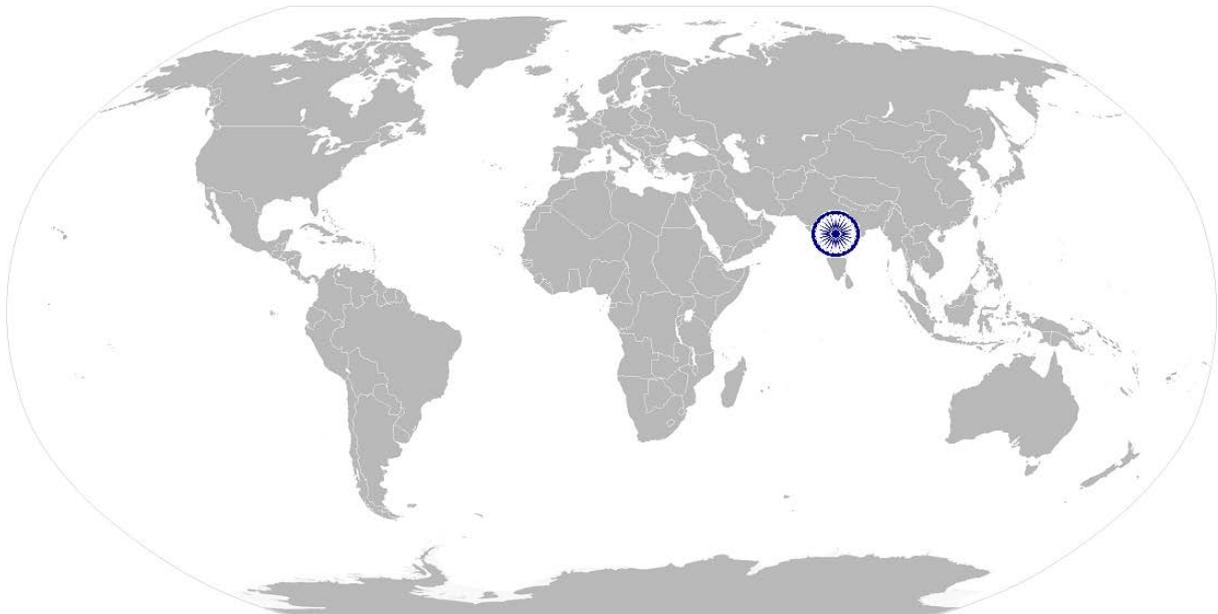
	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to: SA4. question coworkers appropriately in order to clarify instructions and other issues SA5. give clear instructions to coworkers, subordinates others
	Decision Making
	The user/individual on the job needs to know and understand how to: SA6. make appropriate decisions pertaining to the concerned area of work with respect to intended work objective, span of authority, responsibility, laid down procedure and guidelines
B. Professional Skills	Plan and Organize
	The user/individual on the job needs to know and understand: SB1. plan and organize their own work schedule, work area, tools, equipment and materials to maintain decorum and for improved productivity
	Working with others
	The user/individual on the job needs to know and understand how to: SB2. remain congenial while discussing and debating issues with co-workers SB3. follow appropriate protocols for communication based on situation, hierarchy, organizational culture and practice SB4. ask for, provide and receive required assistance where possible to ensure achievement of work related objectives SB5. thank coworkers for any assistance received SB6. offer appropriate respect based on mutuality and respect for fellow workmanship and authority
	Problem Solving
	The user/individual on the job needs to know and understand how to: SB7. think through the problem, evaluate the possible solution(s) and suggest an optimum /best possible solution(s) SB8. identify immediate or temporary solutions to resolve delays SB9. identify sources of support that can be availed of for problem solving for various kind of problems SB10. seek appropriate assistance from other sources to resolve problems SB11. report problems that you cannot resolve to appropriate authority
	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB12. identify cause and effect relations in their area of work SB13. use cause and effect relations to anticipate potential problems and their solution

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NOS Version Control

NOS Code	CSC / N 0135		
Credits(NSQF) [OPTIONAL]		Version number	2.0
Industry	CAPITAL GOODS	Drafted on	10/04/14
Industry Sub-sector	<ol style="list-style-type: none"> 1. Machine Tools 2. Tools Dies And Press Tools 3. Plastic Manufacturing Machinery 4. Textile Manufacturing Machinery 5. Process Plant Machinery 6. Electrical and Power Generation Machinery 7. Light Engineering Goods 	Last reviewed on	
		Next review date	15/04/14

National Occupational Standard



Overview

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

CSC/ N 0136: Work effectively with others

Unit Code	CSC / N 0136
Unit Title (Task)	Work effectively with others
Description	<p>This unit covers basic etiquette and competencies that a candidate is required to possess and demonstrate in their behavior and interactions with others at the workplace.</p> <p>These cover areas such as communication etiquette, discipline, listening, handling conflict and grievances.</p>
Scope	<p>This unit/task covers the following:</p> <p>Etiquette includes:</p> <ul style="list-style-type: none"> do not use abusive language use appropriate titles and terms of respect do not eat or chew while talking (vice versa)etc. <p>Behaviors include:</p> <ul style="list-style-type: none"> punctuality completing tasks as per given time and standards not gossiping and idling time eliminating waste honesty, etc.
Performance Criteria (PC) w.r.t. the Scope	
Element	Performance Criteria
	<p>The user/individual on the job should be able to:</p> <p>PC1. accurately receive information and instructions from the supervisor and fellow workers, getting clarification where required</p> <p>PC2. accurately pass on information to authorized persons who require it and within agreed timescale and confirm its receipt</p> <p>PC3. give information to others clearly, at a pace and in a manner that helps them to understand</p> <p>PC4. display helpful behavior by assisting others in performing tasks in a positive manner, where required and possible</p> <p>PC5. consult with and assist others to maximize effectiveness and efficiency in carrying out tasks</p> <p>PC6. display appropriate communication etiquette while working</p> <p>PC7. display active listening skills while interacting with others at work</p> <p>PC8. use appropriate tone, pitch and language to convey politeness, assertiveness, care and professionalism</p> <p>PC9. demonstrate responsible and disciplined behaviors at the workplace</p> <p>PC10. escalate grievances and problems to appropriate authority as per procedure to resolve them and avoid conflict</p>
Knowledge and Understanding (K)	
A. Organizational Context	The user/individual on the job needs to know and understand:

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<p>(Knowledge of the company / organization and its processes)</p>	<p>KA1. legislation, standards, policies, and procedures followed in the company relevant to own employment and performance conditions</p> <p>KA2. reporting structure, inter-dependent functions, lines and procedures in the work area</p> <p>KA3. relevant people and their responsibilities within the work area</p> <p>KA4. escalation matrix and procedures for reporting work and employment related issues</p>
<p>B. Technical Knowledge</p>	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. various categories of people that one is required to communicate and co-ordinate with in the organization</p> <p>KB2. importance of effective communication in the workplace</p> <p>KB3. importance of teamwork in organizational and individual success</p> <p>KB4. various components of effective communication</p> <p>KB5. key elements of active listening</p> <p>KB6. value and importance of active listening and assertive communication</p> <p>KB7. barriers to effective communication</p> <p>KB8. importance of tone and pitch in effective communication</p> <p>KB9. importance of avoiding casual expletives and unpleasant terms while communicating professional circles</p> <p>KB10. how poor communication practices can disturb people, environment and cause problems for the employee, the employer and the customer</p> <p>KB11. importance of ethics for professional success</p> <p>KB12. importance of discipline for professional success</p> <p>KB13. what constitutes disciplined behavior for a working professional</p> <p>KB14. common reasons for interpersonal conflict</p> <p>KB15. importance of developing effective working relationships for professional success</p> <p>KB16. expressing and addressing grievances appropriately and effectively</p> <p>KB17. importance and ways of managing interpersonal conflict effectively</p>
<p>Skills (S) [Optional]</p>	

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