

QUALIFICATIONS PACK- OCCUPATIONAL STANDARDS FOR PLUMBING

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 – Plumbing Foreman

SECTOR: PLUMBING INDUSTRY

SUB-SECTOR: Contractors

OCCUPATION: Plumbing

REFERENCE ID: PSC/Q0113

ALIGNED TO: NCO-2004/7138.30

Plumbing Foreman: Plumbing Foreman is an important job role in co-ordination of plumbing work with plumbers/workers/supervisors on the work site in 'contractors' segment.

Brief Job Description: A Plumbing Foreman is responsible for supervising, coordinating and scheduling the activities of supervisors, plumbers and other staffs.

Personal Attributes: He should be able to work independently on his assignment. He should be comfortable in performing laborious work. He should be a good listener and follower of instructions. He should be a good team player. He should be result oriented and positive in attitude.

Job Details	Qualifications Pack Code	PSC/Q0113		
	Job Role	Plumbing Foreman		
	Credits(NVEQF/NVQF/NSQF) [OPTIONAL]	TBD	Version number	0.1
	Sector	Plumbing	Drafted on	15/07/13
	Sub-sector	Contractors	Last reviewed on	30/07/13
	Occupation	Plumbing	Next review date	31/01/14

Job Role	Plumbing Foreman
Role Description	Responsible for for supervising, coordinating and scheduling the activities of supervisors, plumbers and other staffs.
NVEQF/NVQF level	5
Minimum Educational Qualifications*	12 th Passout / ITI
Maximum Educational Qualifications*	N.A.
Training (Suggested but not mandatory)	On-the-job training.
Experience	In lieu of minimum qualification the employee has worked as a general plumber for minimum 6 years.
Applicable National Occupational Standards (NOS)	Compulsory: <ol style="list-style-type: none"> PSC/ N 0107 (Resource management) PSC/ N 0105 (Inspection and quality check of basic plumbing systems) PSC/ N 0128 (Supervision and management of workers and supervisors) PSC/ N 0108 (Coordinating with the senior and other working team) PSC/ N 0109 (Maintain a healthy, safe and secure working environment) Optional: <ol style="list-style-type: none"> N.A.
Performance Criteria	As described in the relevant OS units

Definitions

Keywords /Terms	Description
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.
Occupation	Occupation is a set of job roles, which perform similar/related set of functions in an industry.
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 OS.
Job Role	Job role defines a unique set of functions that together form a unique employment opportunity in an organization.
OS	OS specify the standards of performance an individual must achieve when carrying out a function in the workplace, together with the knowledge and understanding they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria	Performance Criteria are statements that together specify the standard of performance required when carrying out a task.
NOS	NOS are Occupational Standards which apply uniquely in the Indian context.
Qualifications Pack Code	Qualifications Pack Code is a unique reference code that identifies a qualifications pack.
Qualifications Pack	Qualifications Pack comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A Qualifications Pack is assigned a unique qualification pack code.
Unit Code	Unit Code is a unique identifier for an Occupational Standard , which is denoted by an 'N'.
Unit Title	Unit Title gives a clear overall statement about what the incumbent should be able to do.
Description	Description gives a short summary of the unit content. This would be helpful to anyone searching on a database to verify that this is the appropriate OS they are looking for.
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.
Organizational Context	Organizational 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.
Technical Knowledge	Technical Knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Core Skills or 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 OS, these include communication related skills that are applicable to most job roles.

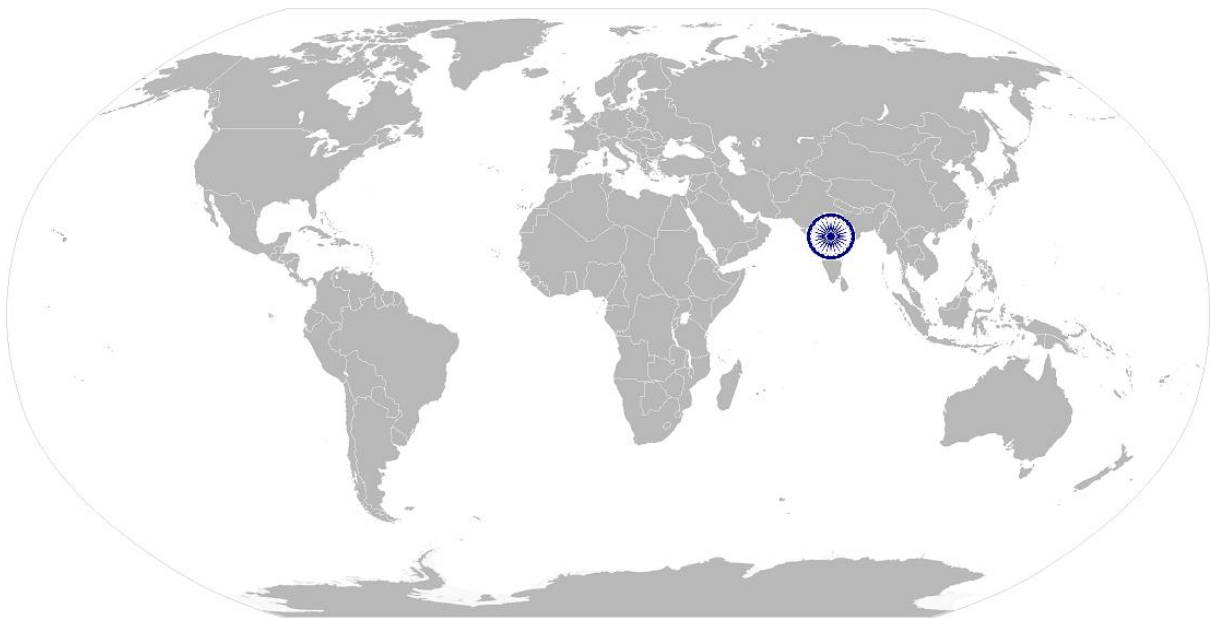
Acronyms

Keywords /Terms	Description
IPSC	Indian Plumbing Skills council
NOS	National Occupational Standards
NSQF	National Skills Qualification Framework
NVEQF	National Vocational Educational Qualification Framework
NVQF	National Vocational Qualification Framework
OS	Occupational Standards
PC	Performance Criteria
QP	Qualification Pack
SSC	Sector Skills Council



PSC/N0107 Resource management (Manpower, Material and Tools)

National Occupational Standard



Overview

This unit is about management of resources in terms of manpower, material and tools during execution of a plumbing assignment/task.



PSC/N0107 Resource management (Manpower, Material and Tools)

Unit Code	PSC/N0107
Unit Title (Task)	Resource management (Manpower, Material and Tools)
Description	This OS unit is about management of resources in terms of manpower, material and tools during execution of a plumbing assignment/task
Scope	<p>This unit/task covers the following:</p> <p>Manpower management</p> <ul style="list-style-type: none"> workforce planning and work assignment related activities <p>Material and tools management</p> <ul style="list-style-type: none"> planning and maintaining inventory of material required for the task maintenance and management of tools and equipments
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
Manpower management	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. schedule assign day to day activities to plumbers</p> <p>PC2. overall supervision of plumbing work at the site</p> <p>PC3. management of manpower in cases of change of schedule/plan</p>
Material & tools management	<p>PC4. keeping track of material usage</p> <p>PC5. aid in obtaining materials necessary to complete the job</p> <p>PC6. management of plumbing tools and equipment</p> <p>PC7. management of material/tools in cases of change of schedule/plan</p> <p>PC8. maintain plumbing tools and equipment</p>
Knowledge and Understanding (K)	
A. Organizational Context	<p>the user/individual on the job needs to know and understand:</p> <p>KA1. impact of various resources on cost, quality, productivity, delivery and safety</p> <p>KA2. material disposal procedure, importance of appropriate disposal of material and implications of not following the material disposal procedure</p> <p>KA3. risk and impact of not following defined procedures/work instructions</p> <p>KA4. handover/ takeover of the equipment / work area as per requirement</p> <p>KA5. skills and expertise of the working team</p> <p>KA6. procedure to put requisition for materials and supplies</p> <p>KA7. procedure of providing adequate feedback about working team</p>



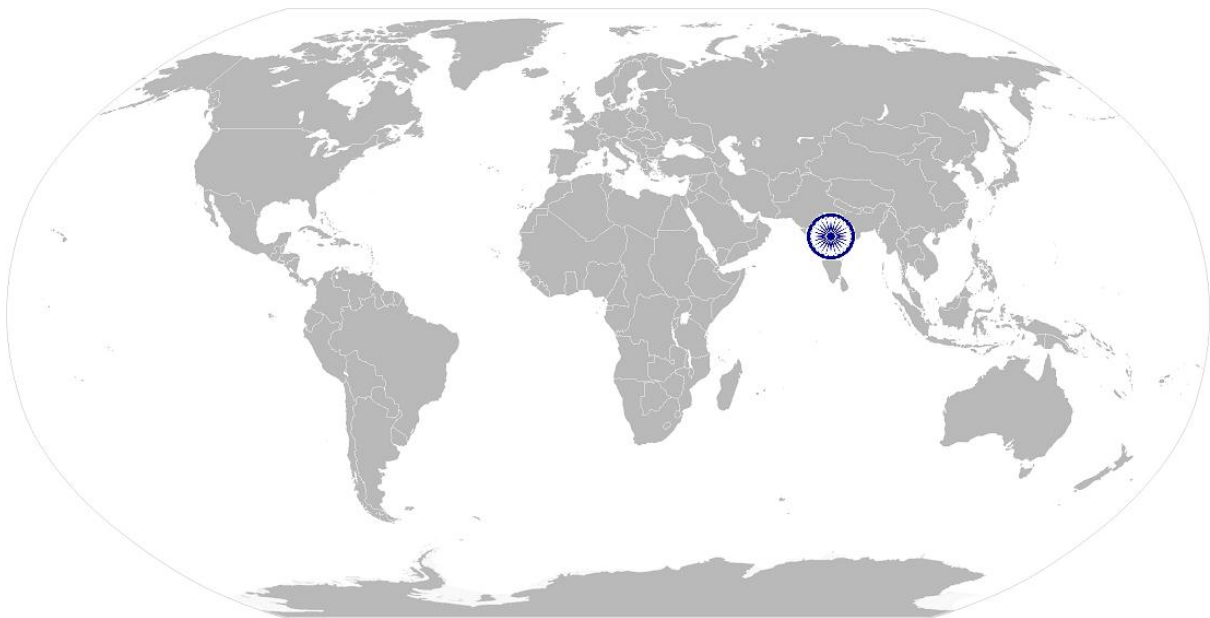
PSC/N0107 Resource management (Manpower, Material and Tools)

B. Technical Knowledge	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. different types of materials (ci/gi/pvc pipes, etc.), basic sanitary fittings (valves, clamps, elbows, etc.) and fixtures (showers, taps, basins, etc.)</p> <p>KB2. techniques related to cutting, bending and joining of fittings and fixtures</p> <p>KB3. basic plumbing terminology</p> <p>KB4. relevant hand and power tools such as wrenches, plier, screwdriver, power drill, pipe cutter, crimping tool, pipe bender, threading tool, hacksaw, metal file, etc.</p> <p>KB5. units of measurement</p> <p>KB6. material disposal procedure, importance of appropriate disposal of material</p>
Skills (S)	
A. Core Skills/ Generic Skills	Communication skills
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SA1. communicate in Hindi / regional language</p> <p>SA2. instruct workers and explain the task to be performed</p>
	<p>Administrative skills</p> <p>SA3. put requisition for more resources in terms of manpower, material and/or tools</p> <p>SA4. re-allocate resources in case of change of plan or emergency situations</p> <p>SA5. give feedback and convey the ways of improvement</p> <p>SA6. resolve work problems and recommend measures to improve productivity</p>
B. Professional Skills	Resource management skills
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB1. estimate resources required for a work/task</p> <p>SB2. plan and maintain an optimum inventory of resources for on-going work</p> <p>SB3. determine the accuracy and thoroughness of work</p> <p>SB4. use a variety of measuring devices</p> <p>SB5. identify tools, equipment and procedures required for installing piping fixtures and fittings</p> <p>SB6. operate, maintain and repair tools</p>
	Reflective thinking
	<p>SB7. plan the work process in such a way which improves quality with minimal resource utilization</p> <p>SB8. apply learning of past errors</p> <p>SB9. improve productivity and increase efficiency based on the past experience</p>
Critical thinking	



PSC/N0107 Resource management (Manpower, Material and Tools)

	SB10. use logic and reasoning to identify the probable solutions for correcting run-time errors and resource shortfalls
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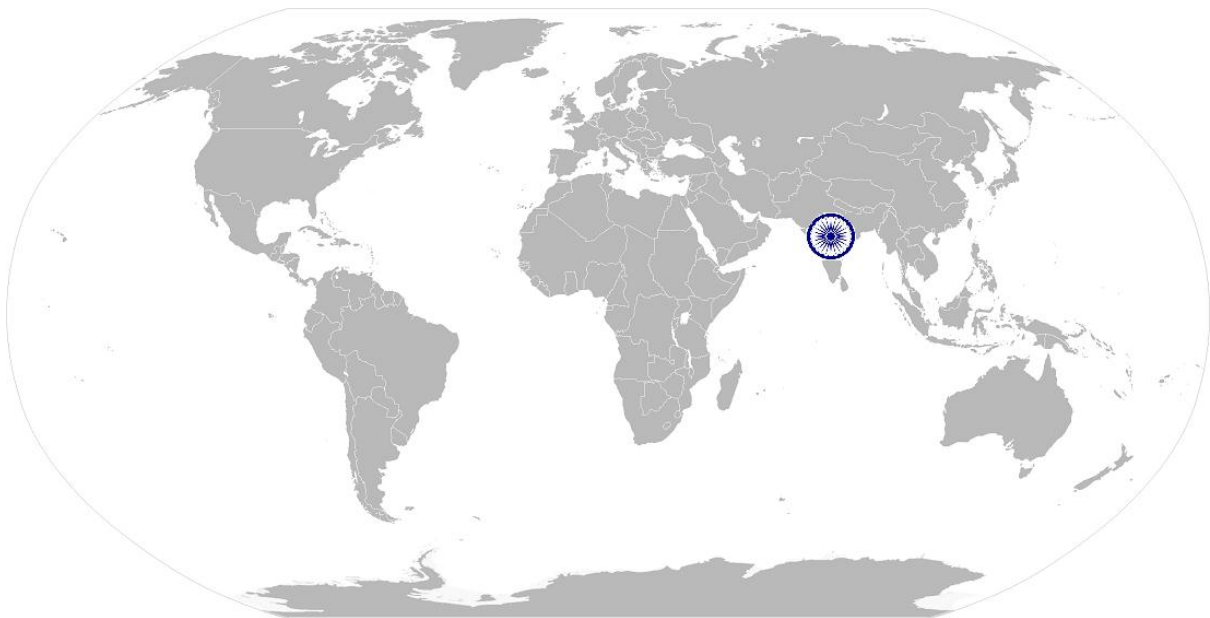




PSC/N0107 Resource management (Manpower, Material and Tools)

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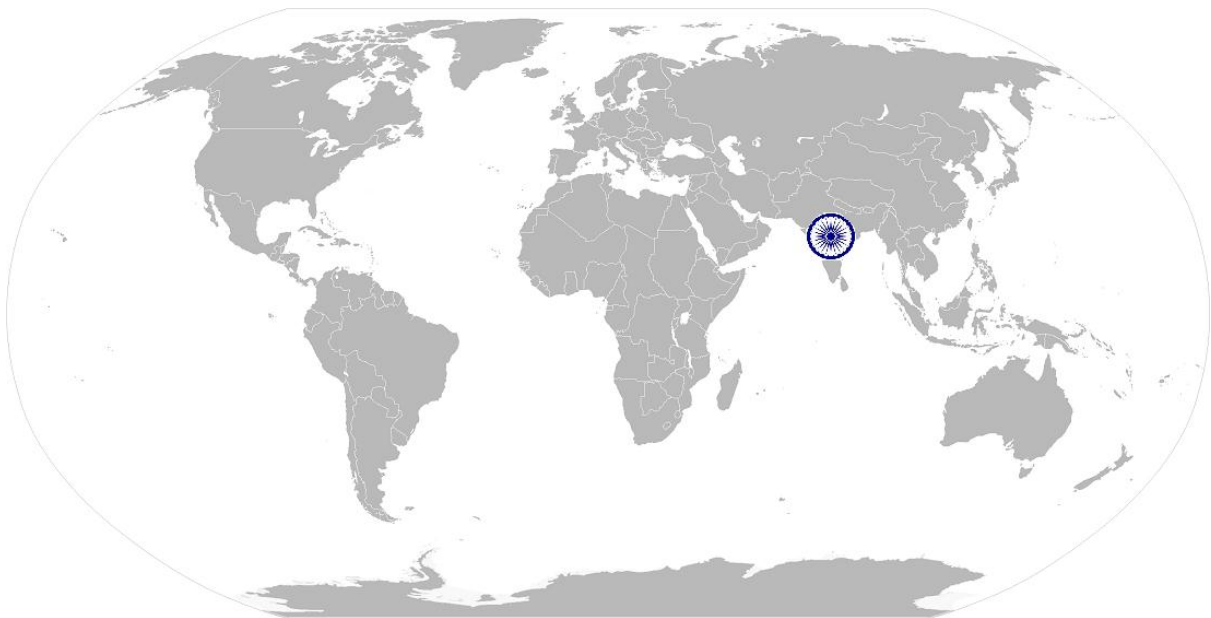
NOS Code	PSC /N0107		
Credits(NVEQF/NVQF/NSQF) [OPTIONAL]	TBD	Version number	0.1
Industry	Plumbing	Drafted on	15/07/13
Industry Sub-sector	Contractors	Last reviewed on	30/07/13
		Next review date	31/01/14





PSC/N0105 Inspection and quality check of basic plumbing systems

National Occupational Standard



Overview

This unit is about inspection and quality check of basic plumbing systems in housing, commercial and institutional setups.



PSC/N0105 Inspection and quality check of basic plumbing systems

Unit Code	PSC/N0105
Unit Title (Task)	Inspection and quality check of basic plumbing systems
Description	This OS unit is about inspection and quality check of basic plumbing systems in housing, commercial and institutional setups.
Scope	<p>This unit/task covers the following:</p> <p>Inspection</p> <ul style="list-style-type: none"> It covers inspection of all the systems for required functioning <p>Quality check</p> <ul style="list-style-type: none"> Ensure quality in all installations and connections
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
Preparatory site inspection	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. access completion of required work</p> <p>PC2. verify field measurements as per drawings / site requirements</p> <p>PC3. assure availability and quality of required materials</p> <p>PC4. identify any non-conformances to the requirements for the work/task to begin</p> <p>PC5. identify potential problems</p>
Work-in-progress and completion related inspection	<p>PC6. keep a track of adequate and proper usage of material</p> <p>PC7. ensure fittings and fixtures are installed as per the layout</p> <p>PC8. Inspect all the systems for required functioning</p> <p>PC9. ensure quality in all installations and connections in terms of proper alignment, water tight joints (pressure and flow/smoke tests), access area for cleaning of fixtures, etc.</p>
Knowledge and Understanding (K)	
A. Organizational Context	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. company's policies on: quality and delivery standards, safety and hazards, integrity, dress code, etc.</p> <p>KA2. risk and impact of not following defined procedures/work instructions</p> <p>KA3. general inspection procedures</p>
B. Technical Knowledge	<p>KB1. different types of materials (CI/GI/PVC pipes, etc.), basic sanitary fittings (valves, clamps, elbows, etc.) and fixtures (showers, taps, basins, etc.)</p> <p>KB2. techniques related to cutting, bending and joining of fittings and fixtures</p> <p>KB3. various types of defects such as leakages, improper alignment, etc.</p>



PSC/N0105 Inspection and quality check of basic plumbing systems

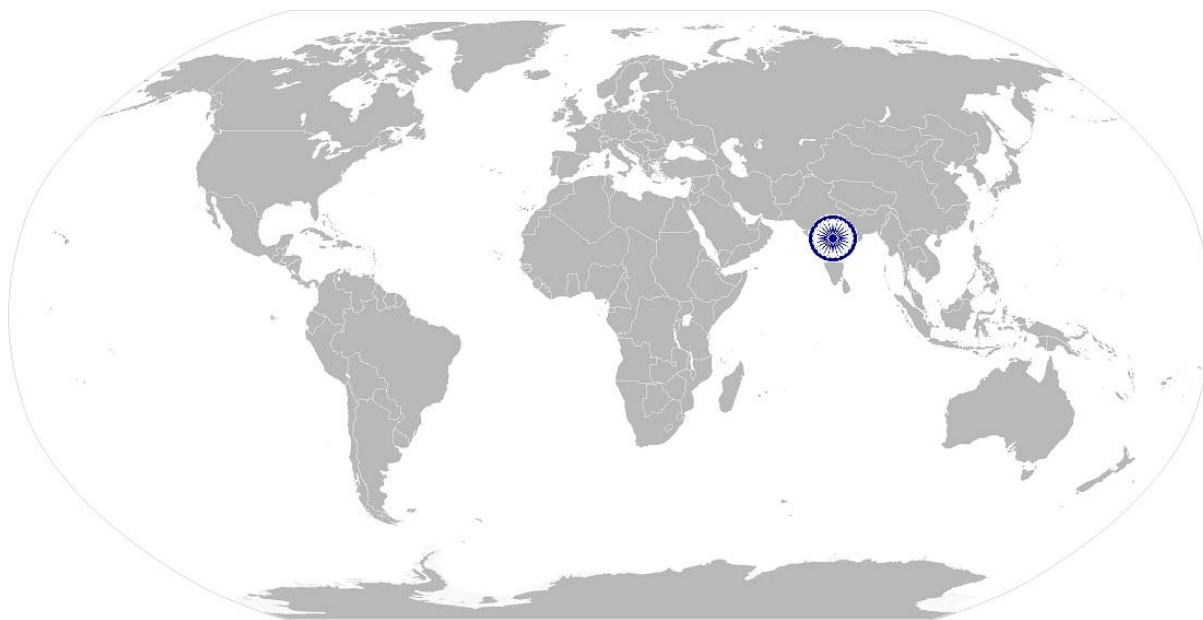
	KB4. procedure for conducting pressure and flow/smoke tests KB5. basic plumbing terminology KB6. units of measurement KB7. material disposal procedure, importance of appropriate disposal of material
Skills (S)	
A. Core Skills/ Generic Skills	Communication skills
	The user/individual on the job needs to know and understand how to: SA1. communicate in Hindi / regional language SA2. instruct and enquire the workers related to quality check
	Measurement/positioning skills
	SA3. perform simple mathematical calculations SA4. measure and mark positions as per instructions
B. Professional Skills	Critical thinking and decision making
	The user/individual on the job needs to know and understand how to: SB1. spot signs of deviation from quality and communicate to the reporting authority SB2. learn from past errors
	Quality check
	SB3. ensure quality at work-in-progress stage SB4. check for quality parameters in the installations and connections of various fittings and fixtures



PSC/N0105 Inspection and quality check of basic plumbing systems

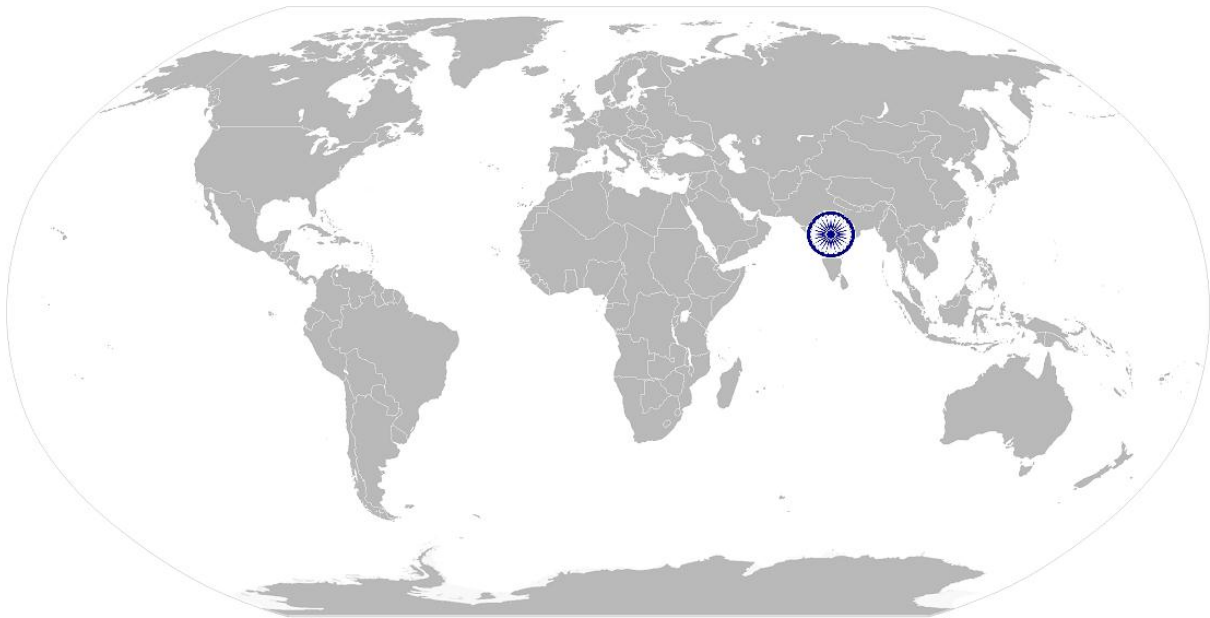
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NOS Code	PSC /N0105		
Credits(NVEQF/NVQF/NSQF) [OPTIONAL]	TBD	Version number	0.1
Industry	Plumbing	Drafted on	15/07/13
Industry Sub-sector	Contractors	Last reviewed on	30/07/13
		Next review date	31/01/14





National Occupational Standard



Overview

This unit is about supervision and management of plumbers/workers and supervisors during execution of a plumbing assignment/task.



PSC/N0128 Supervision and management of workers and supervisors

Unit Code	PSC/N0128
Unit Title (Task)	Supervision and management of workers and supervisors
Description	This OS unit is about supervision and management of plumbers/workers and supervisors during execution of a plumbing assignment/task
Scope	<p>This unit/task covers the following:</p> <p>Manpower supervision and management</p> <ul style="list-style-type: none"> workforce planning and work assignment related activities supervision and management of plumbers/workers and supervisors
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
Manpower supervision and management	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. schedule and assign day to day activities to supervisors</p> <p>PC2. schedule and assign day to day activities to plumbers/workers</p> <p>PC3. management of manpower in cases of change of schedule/plan</p> <p>PC4. overall supervision of plumbing work at the site</p>
Knowledge and Understanding (K)	
A. Organizational Context	<p>the user/individual on the job needs to know and understand:</p> <p>KA1. impact of various resources on cost, quality, productivity, delivery and safety</p> <p>KA2. risk and impact of not following defined procedures/work instructions</p> <p>KA3. handover/ takeover of the equipment / work area as per requirement</p> <p>KA4. skills and expertise of the plumbers/ other working team</p> <p>KA5. procedure to put requisition of materials and manpower</p>
B. Technical Knowledge	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. different types of materials (CI/ GI/ PVC pipes, etc.), basic sanitary fittings (valves, clamps, elbows, etc.) and fixtures (showers, taps, basins, etc.)</p> <p>KB2. techniques related to cutting, bending and joining of fittings and fixtures</p> <p>KB3. basic plumbing terminology</p> <p>KB4. relevant hand and power tools such as wrenches, pliers, screwdriver, power drill, pipe cutter, crimping tool, pipe bender, threading tool, hacksaw, metal file, etc.</p> <p>KB5. units of measurement</p> <p>KB6. material disposal procedure and its importance</p>
Skills (S)	
A. Core Skills/	Communication skills



PSC/N0128 Supervision and management of workers and supervisors

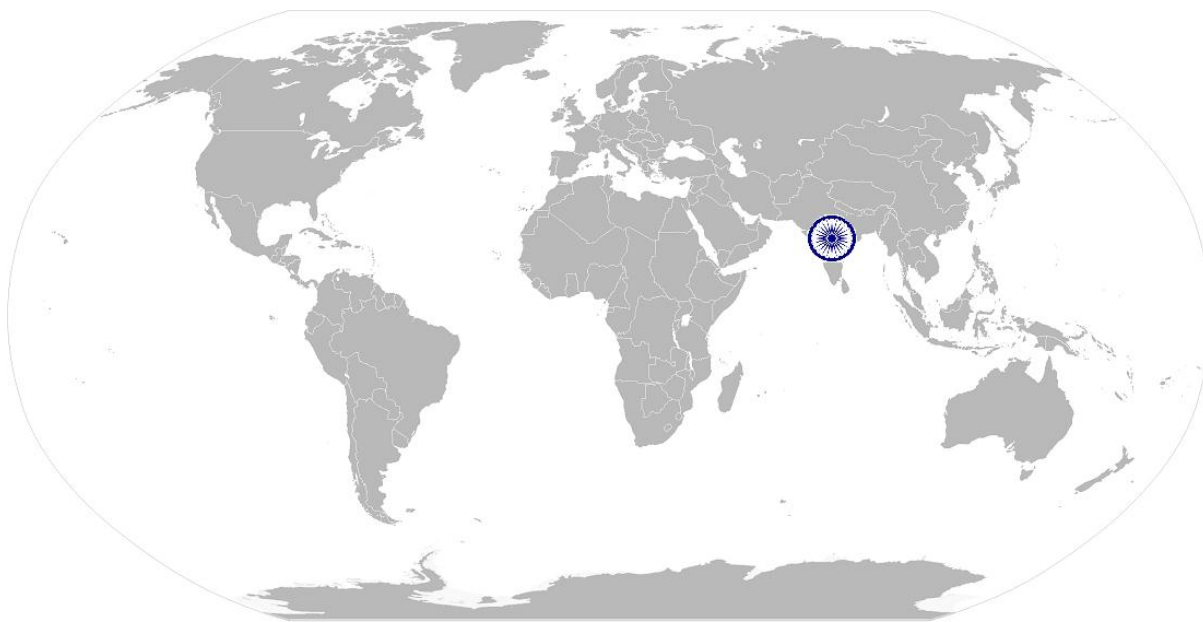
Generic Skills	The user/individual on the job needs to know and understand how to: SA1. communicate in Hindi / regional language SA2. instruct workers and explain the task to be performed
	Administrative skills
	SA3. put requisition for more resources SA4. re-allocate resources in case of change of plan or emergency situations SA5. give feedback and convey the ways of improvement SA6. resolve work problems and disputes of worker and recommend measures to improve productivity
B. Professional Skills	Manpower management skills
	The user/individual on the job needs to know and understand how to: SB1. estimate manpower resources required for a work/task SB2. plan and maintain an optimum inventory of plumbers/workers for on-going work SB3. determine the accuracy and thoroughness of work
	Reflective thinking
	SB4. plan the work process in such a way which improves quality with minimal manpower utilization SB5. apply learning of past errors SB6. improve productivity and increase efficiency based on the past experience
	Critical thinking
	SB7. use logic and reasoning to identify the probable solutions for correcting run-time errors and resource shortfalls



PSC/N0128 Supervision and management of workers and supervisors

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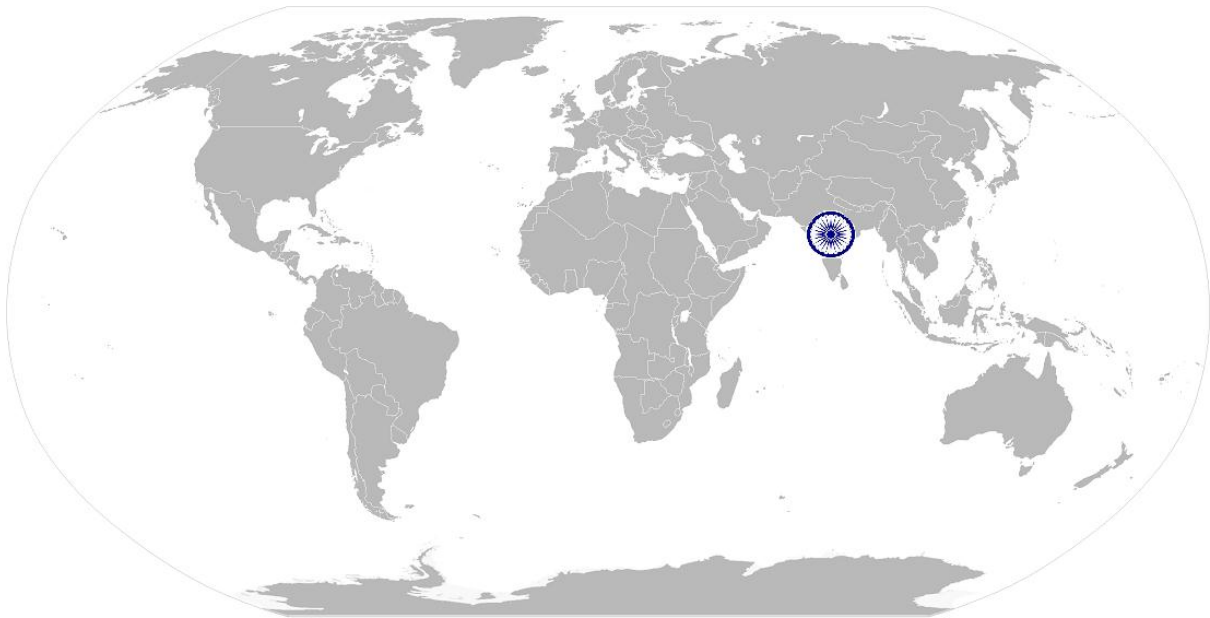
NOS Code	PSC/N0115		
Credits(NVEQF/NVQF/NSQF) [OPTIONAL]	TBD	Version number	0.1
Industry	Plumbing	Drafted on	01/09/13
Industry Sub-sector	Contractors	Last reviewed on	30/10/13
		Next review date	30/04/14





PSC/N0108 Coordinating with the senior and other working team

National Occupational Standard



Overview

This unit is about team work and level of communication with colleagues or clients. It determines the ability to work as a team member, share work and multi-task in order to achieve the deliverables on schedule.



PSC/N0108 Coordinating with the senior and other working team

National Occupational Standard	Unit Code	PSC/N0108
	Unit Title (Task)	Coordinating with the senior and other working team
	Description	This OS unit is about communicating with colleagues and seniors in order to achieve smooth and hazard free work flow
	Scope	<p>This unit/task covers the following:</p> <p>Interact with senior</p> <ul style="list-style-type: none"> receive work instructions, discuss task status and receive feedback <p>Interact with colleagues within and outside the team</p> <ul style="list-style-type: none"> communicate and discuss work flow, problems faced, possible solutions and pass on the learning within and outside the team
	Performance Criteria(PC) w.r.t. the Scope	
	Element	Performance Criteria
	Interaction with senior	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. receive work instructions and raw materials from reporting senior</p> <p>PC2. communicate to reporting senior about task status, repairs and maintenance of tools and equipment as required</p> <p>PC3. communicate any potential hazards and expected process disruptions</p> <p>PC4. handover completed task to reporting senior</p> <p>PC5. receive feedback from reporting senior</p> <p>PC6. report any anticipated reasons for delays</p>
	Interact with colleagues within and outside the team	<p>PC7. work as a team with colleagues and share work as per the work load and skills</p> <p>PC8. work with colleagues of other teams</p> <p>PC9. communicate and discuss work flow related difficulties in order to find solution with mutual agreement</p> <p>PC10. taking instructions from the reporting senior</p> <p>PC11. report problem/incident etc.</p> <p>PC12. put team over individual goals</p> <p>PC13. resolve conflicts</p>
	Knowledge and Understanding (K)	
	A. Organizational Context	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. company's policies on: preferred language of communication, quality delivery standards and personnel management</p> <p>KA2. reporting structure</p>



PSC/N0108 Coordinating with the senior and other working team

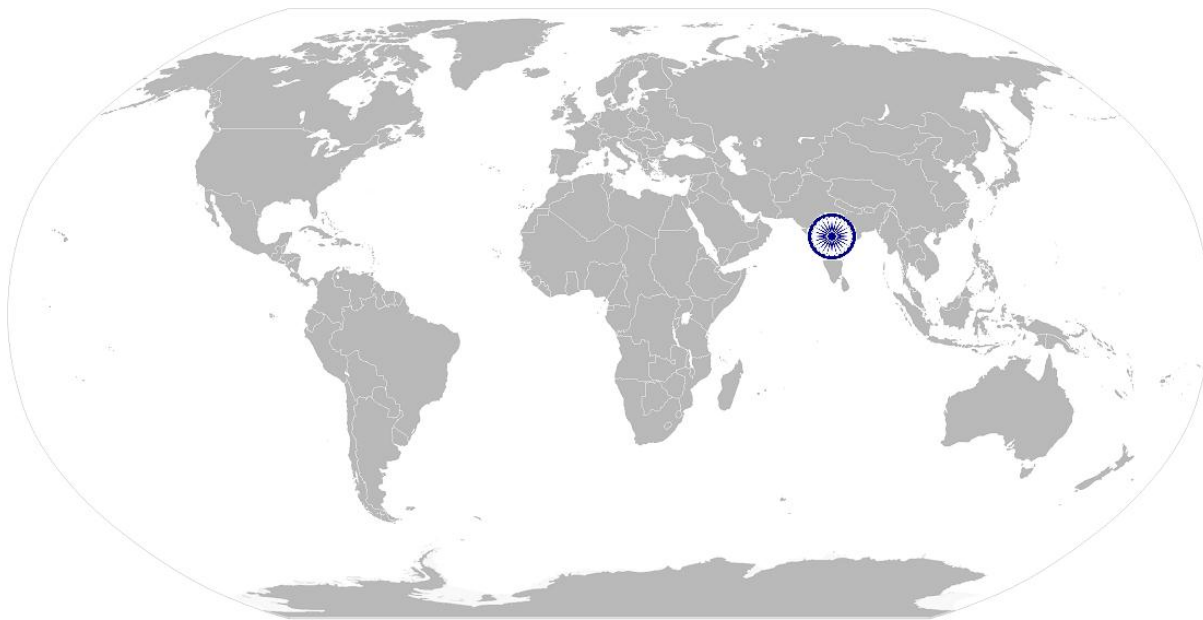
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. effective ways of communication KB2. building team co-ordination
Skills (S)	
A. Core Skills/ Generic Skills	Communication skills
	The user/individual on the job needs to know and understand how to: SA1. communicate in Hindi / regional language
	Teamwork
	SA2. share work load as required SA3. accept and interpret instructions and requirements correctly SA4. co-ordinate with co-workers and sub-ordinates
B. Professional Skills	Decision making
	The user/individual on the job needs to know and understand: SB1. how to spot and communicate potential areas of disruptions to work process and report the same SB2. when to report to senior and when to deal with a colleague individually, depending on the type of concern
	Reflective thinking
	SB3. improve work processes by interacting with others and adopting best practices



PSC/N0108 Coordinating with the senior and other working team

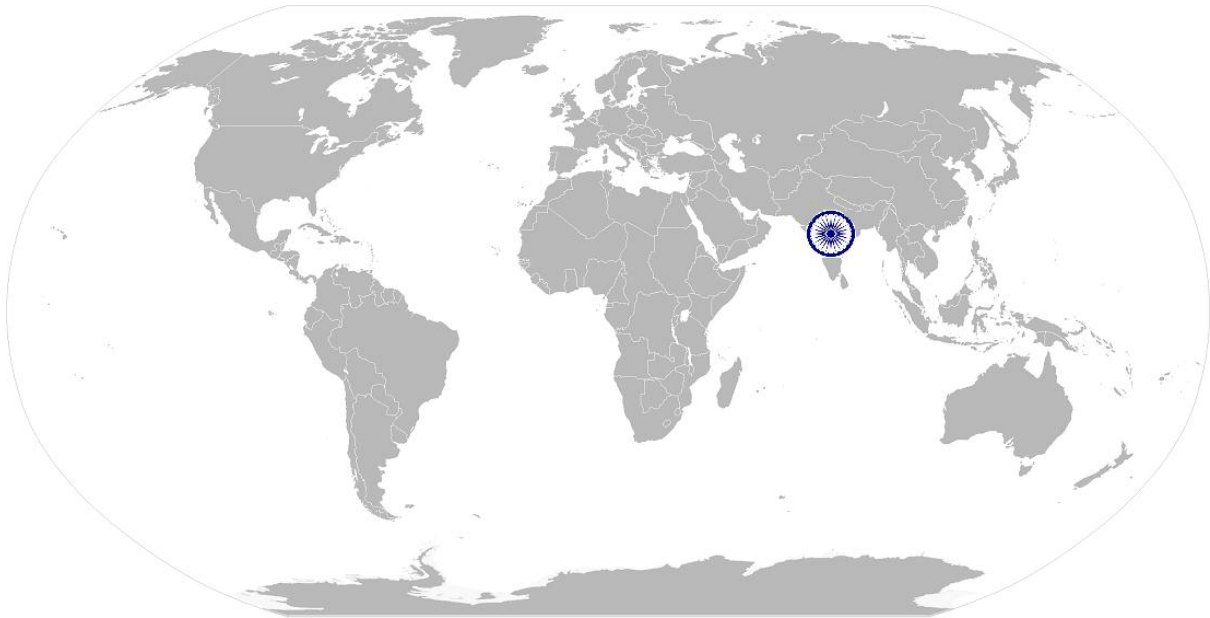
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NOS Code	PSC/N0108		
Credits(NVEQF/NVQF/NSQF) [OPTIONAL]	TBD	Version number	0.1
Industry	Plumbing	Drafted on	15/07/13
Industry Sub-sector	Contractors	Last reviewed on	30/07/13
		Next review date	31/01/14





National Occupational Standard



Overview

This unit is about being aware of, communicating and taking steps towards minimizing potential hazards and dangers of accidents on the job and maintaining occupational health and safety.



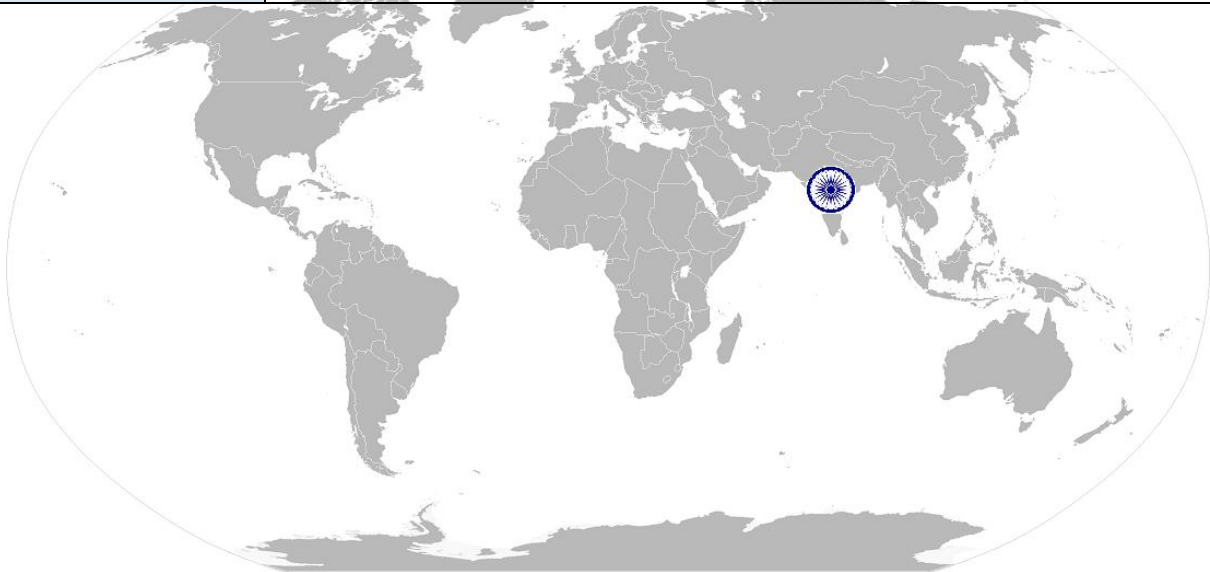
PSC/N0109 Maintain a healthy, safe and secure working environment

Unit Code	PSC/N0109
Unit Title (Task)	Maintain a healthy, safe and secure working environment
Description	This OS unit is about monitoring your working environment and making sure it meets requirements for health and safety
Scope	<p>This unit/task covers the following:</p> <p>Communicate to reporting senior about</p> <ul style="list-style-type: none"> process flow improvements that can reduce anticipated or repetitive hazards mishandling of tools and equipment electrical or any other problem at the construction site that could result in accident
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
Communicating potential accident points	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. to avoid accidents related to use of sharp tools and equipment</p> <p>PC2. attend and actively participate in the health and safety campaigns organized by the company or any other authority</p>
Using safety gear and following healthy practices	<p>PC3. use or wear safety gear (helmet, gloves, goggles, safety shoes, ear plugs, etc.) as per the rules of the company</p> <p>PC4. attend fire drills or any other safety drills organized by the company or any other authority</p> <p>PC5. learn first-aid procedure</p> <p>PC6. use insect repellents and safe drinking water</p> <p>PC7. use site toilets and follow other hygienic practices</p> <p>PC8. understand the evacuation and emergency procedures</p>
Knowledge and Understanding (K)	
A. Organizational Context	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. company's policy on: safety and hazards and personnel management</p> <p>KA2. reporting structure</p>
B. Technical Knowledge	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. how to use tools and equipment without suffering any physical harm</p> <p>KB2. first-aid procedure</p> <p>KB3. diseases caused due use of unsafe water, biting of insects and following unhygienic practices</p> <p>KB4. evacuation and emergency procedures</p>
Skills (S)	



PSC/N0109 Maintain a healthy, safe and secure working environment

A. Core Skills/ Generic Skills	Communication skills
	The user/individual on the job needs to know and understand how to: SA1. effectively communicate the danger
	Organising skills
	SA2. keep all the tools in an organised manner so as to avoid accidents SA3. keep the work environment safe and clean
B. Professional Skills	Decision making
	The user/individual on the job needs to know and understand how to: SB1. report potential sources of danger SB2. follow prescribed procedure in the event of an accident SB3. wear appropriate safety gear to avoid an accident
	Reflective thinking
	SB4. learn from past mistakes regarding use of hazardous tools and equipment

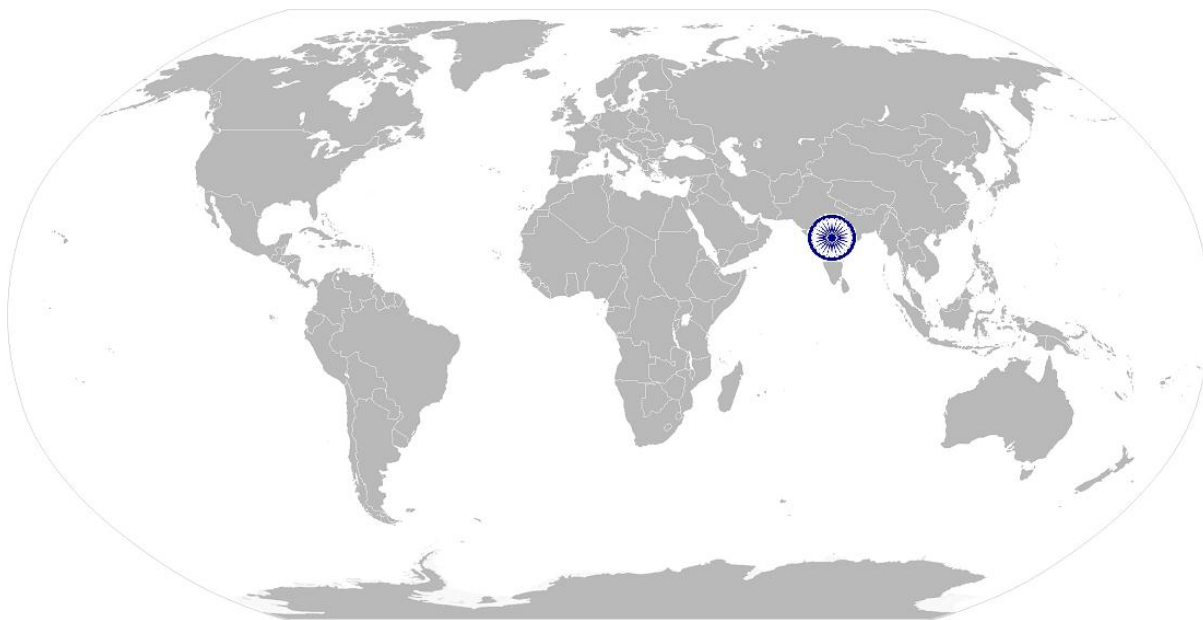




PSC/N0109 Maintain a healthy, safe and secure working environment

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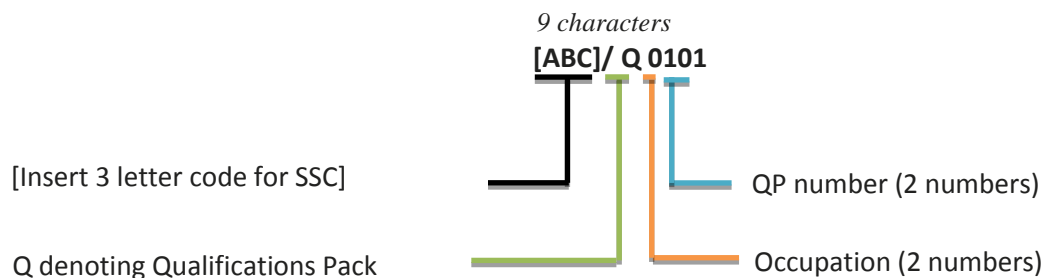
NOS Code	PSC /N0109		
Credits(NVEQF/NVQF/NSQF) [OPTIONAL]	TBD	Version number	0.1
Industry	Plumbing	Drafted on	15/07/13
Industry Sub-sector	Contractors	Last reviewed on	30/07/13
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Annexure

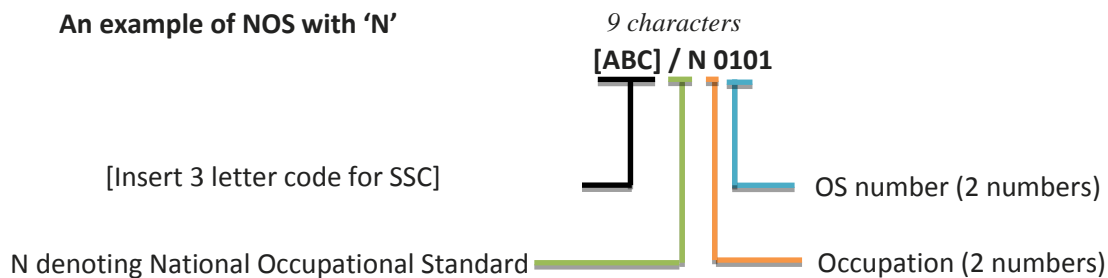
Nomenclature for QP and NOS

Qualifications Pack



Occupational Standard

An example of NOS with 'N'



The following acronyms/codes have been used in the nomenclature above:

Sub-sector	Range of Occupation numbers
Contractors	01-10
Consultants	11-20
Manufacturers	21-30

Sequence	Description	Example
Three letters	Industry name	PSC
Slash	/	/
Next letter	Whether QP or NOS	N
Next two numbers	Occupation code	01
Next two numbers	OS number	01