



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 - Plumber (General)

SECTOR: PLUMBING INDUSTRY

SUB-SECTOR: Contractors

OCCUPATION: Plumbing

REFERENCE ID: PSC/Q0104

ALIGNED TO: NCO-2004/7136.10

Plumber (General): Plumber (General) is an important job role in installation and repair of plumbing fittings and fixtures in 'contractors' segment.

Brief Job Description: A Plumber (General) is responsible for installation, minor repair and maintenance of pipes and sanitary fixtures in housing, commercial and institutional setups.

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. He should be good at taking and following instructions. He should be a good team player. He should be result oriented and positive in attitude.





Job Details

Qualifications Pack Code	PSC/Q0104		
Job Role	Plumber (General)		
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	Plumber (General)	
Role Description	Responsible for installation, minor repair and maintenance of pipes and sanitary fixtures in domestic, commercial and institutional setups.	
NVEQF/NVQF level	3	
Minimum Educational Qualifications*	5 th (To be revised to 10 th post 31 st December, 2017)	
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 semi-skilled helper for minimum 2 years in the same role.	
	Compulsory:	
	 PSC/ N 0101 (<u>Installation of basic sanitary fixtures</u>, <u>fittings</u>, <u>related piping and accessories</u>) 	
	2. PSC/ N 0102 (Repair of basic plumbing systems)	
Applicable National Occupational	3. PSC/ N 0108 (Coordinate with the senior and other	
Standards (NOS)	working team)	
	4. PSC/ N 0109 (Maintain a healthy, safe and secure	
	working environment)	
	Optional:	
	5. N.A.	
Performance Criteria	As described in the relevant OS units	







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 are a group of skills that are key to learning working in today's world. These skills are typically needed in any environment. In the context of the OS, these include communication reskills that are applicable to most job roles.	



Qualifications Pack For Plumber (General)



Acronyms

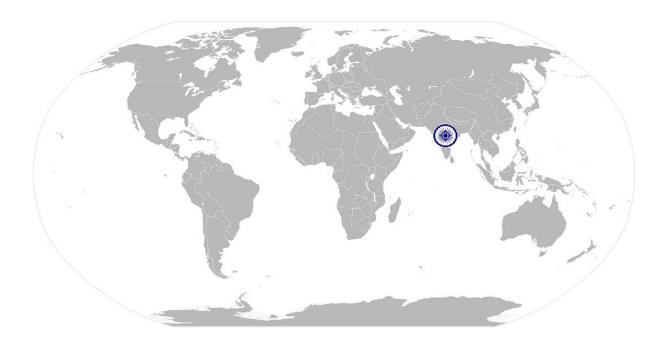
Keywords /Terms	Description
IPSC	Indian Plumbing Skills council
NOS	National Occupational Standards
NSQF	National Skills Qualification Framework
NVEQF	National Vocational Educational Qualification Framework
NVQF	National Vocational Qualification Framework
OS	Occupational Standards
PC	Performance Criteria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







National Occupational Standard



Overview

This unit is about installation of pipes and sanitary fixtures in housing, commercial and institutional setups.







Unit Code	PSC/N0101
Unit Title (Task)	Installation of basic sanitary fixtures, fittings, related piping and accessories
Description	This OS unit is about installation of pipes and sanitary fixtures in housing, commercial
	and institutional setups
Scope	This unit/task covers the following:
	Pre-installation • pre-installation related activities involving understanding of the task, material preparation, taking measurements and marking the positions
	Installation • installation related activities of pipes and sanitary fixtures Post-installation • basic quality check of the installed fittings and fixtures • testing, commissioning and handover activities

Performance Criteria(PC) w.r.t. the Scope

Element	Performance Criteria	
Pre-installation	To be competent, the user/individual on the job must be able to:	
	PC1. understand the task to be done	
	PC2. assemble pipe sections, tubing and fittings, using couplings, clamps, screws,	
	bolts, caulking tools, or cutting, threading and joining equipment	
	PC3. establish the sequence of pipe installations	
	PC4. plan installation around obstructions such as electrical wiring, etc.	
	PC5. locate and mark the position of pipe installations, connections, passage holes,	
	and fixtures in structures, using measuring instruments such as rulers and	
	levels	
Installation	PC6. cut openings in structures to accommodate pipes and pipe fittings, using hand	
	and power tools (if required)	
	PC7. measure, cut, thread, and bend pipe to required angle, using hand and power	
	tools or equipment such as cutting, threading and bending equipment	
	PC8. hang steel supports from ceiling joists to hold pipes in place (if required)	
	PC9. install pipe assemblies, fittings, valves, appliances such as dishwashers and	
	water heaters, and fixtures such as sinks and toilets, using hand and power	
	tools	
Productivity &	PC10. test the joints and fixtures for proper functioning	
Quality of output	PC11. clear the work area and waste disposal	







Kn	Knowledge and Understanding (K)				
A.	Organizational	The user/individual on the job needs to know and understand:			
Context KA1. company's policies on: quality and delivery standards, s		KA1. company's policies on: quality and delivery standards, safety and hazards,			
		integrity, dress code, etc.			
		KA2. importance of the individual's role in the work flow			
		KA3. risk and impact of not following defined procedures/work instructions			
		KA4. how to handover/ takeover of the equipment / work area as per the			
		instructions			
В.	Technical	The user/individual on the job needs to know and understand:			
	Knowledge	KB1. different types of materials (CI/GI/PVC pipes, etc.), basic sanitary fittings			
		(valves, clamps, elbows, etc.) and fixtures (showers, taps, basins, etc.)			
		KB2. techniques related to cutting, bending and joining of fittings and fixtures			
		KB3. various types of defects such as leakages, improper alignment, etc.			
		KB4. basic plumbing terminology			
		KB5. relevant hand and power tools such as wrenches, plier, screwdriver, power			
		drill, pipe cutter, crimping tool, pipe bender, threading tool, hacksaw, metal			
		file,, etc.			
		KB6. units of measurement			
		KB7. material disposal procedure, importance of appropriate disposal of material			
Ski	lls (S)				
A.	Core Skills/	Communicationskills			
	Generic Skills	The user/individual on the job needs to know and understand how to:			
		SA1. communicate in Hindi / regional language			
		Measurement/positioning skills			
		SA2. perform simple mathematical calculations			
		SA3. measure and mark positions as per instructions			
		Teamwork			
		SA4. share work load as required			
		SA5. accept and interpret instructions and requirements correctly			
		SA6. co-ordinate with co-workers and sub-ordinates			
В.	Professional Skills	Use of tools and machines			
		The user/individual on the job needs to know and understand how to:			
		SB1. identify tools, equipment and procedures required for installing piping			
		fixtures and fittings			
		SB2. use following key tools, equipment and consumables for installing piping			
		fixtures and fittings:			







• T	ape measure	Hammers
• H	ack saw	Wrenches
• P	ipe bender	 Threading tool
• S	crewdrivers	Caulking tool
• P	liers	Pipe cutters
• 0	hisels	2ft level
• A	llen keys	Step ladder
• F	iles	Safety, Gloves/goggles/ear plugs
SB3. operate,	maintain and repair too	ls
Installation tech	niques	
SB4. carry ou	t pre-installation prepara	ntion as per requirement
SB5. align and	l join pipes and fixtures a	as per requirement
SB6. stack and store materials and equipment appropriately at the task site		
SB7. test installed fittings and fixtures		



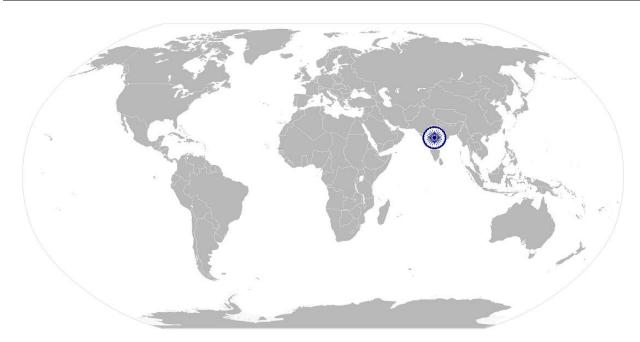






NOS Version Control

NOS Code		PSC /N0101	
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

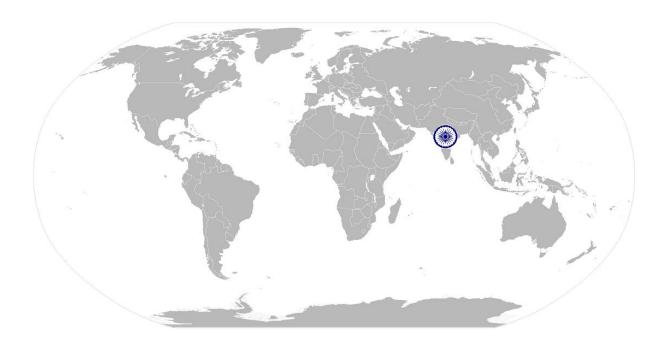








National Occupational Standard



Overview

This unit is about repair of pipes and sanitary fixtures in housing, commercial and institutional setups.







Unit Code	PSC/N0102	
Unit Title (Task)	Repair of basic plumbing systems	
Description	This OS unit is about repair of pipes and sanitary fixtures in housing, commercial and institutional setups	
Scope	This unit/task covers the following:	
	 Diagnosis and Repair diagnosis related activities like understanding the installed system, basic inspection and identification of the fault in the system repair related activities like replacement etc. with minimal damage to other systems 	
Performance Criteria(P	C) w.r.t. the Scope	
Element	Performance Criteria	
Diagnosis	To be competent, the user/individual on the job must be able to: PC1. understand the installed plumbing system PC2. identify the problem/fault in the system and its cause PC3. establish the sequence of repair PC4. assemble fittings, fixtures and tools required for the task	
Repair	 PC5. locate and mark the position of the component to be replaced/repaired, using measuring instruments such as rulers and levels PC6. cut openings in structures to remove defected pipes and pipe fittings, using hand and power tools PC7. measure, cut, thread, and bend pipes to required angle, using hand and power tools or equipment such as cutting, threading and bending equipment PC8. replace with new pipe assemblies, fittings, valves, appliances such as dishwashers and water heaters, and fixtures such as sinks and toilets, using hand and power tools PC9. test the joints and fixtures for proper functioning PC10. clear the work area and waste disposal 	
Quality of output Knowledge and Unders	PC11. deliver the task in time PC12. achieve quality finishing in repair of sanitary fixtures and fittings PC13. ensure minimal wastage of material PC14. ensure minimal damage to other systems	







A.	Organizational	The use	er/individual on the job needs to know and understand:
	Context	KA1.	company's policies on: quality and delivery standards, safety and hazards,
			integrity, dress code, etc.
		KA2.	risk and impact of not following defined procedures/work instructions
		KA3.	how to handover/ takeover of the equipment / work area as per the
			instructions
В.	Technical	The use	er/individual on the job needs to know and understand:
	Knowledge	KB1.	different types of materials (CI/GI/PVC pipes, etc.), basic sanitary fittings
			(valves, clamps, elbows, etc.) and fixtures (showers, taps, basins, etc.)
		KB2.	techniques related to cutting, bending and joining of fittings and fixtures
		KB3.	various types of defects such as leakages, improper alignment, etc.
		KB4.	basic plumbing terminology
		KB5.	relevant hand and power tools such as wrenches, pliers, screwdriver, power
			drill, pipe cutter, crimping tool, pipe bender, threading tool, hacksaw, metal
			file,, etc.
		KB6.	units of measurement
		KB7.	material disposal procedure, importance of appropriate disposal of material
Ski	lls (S)		
A.	Core Skills/	Communication skills	
	Generic Skills	The user/individual on the job needs to know and understand how to:	
		SA1.	communicate in Hindi / regional language
		Measurement/positioning skills	
		SA2.	perform simple mathematical calculations
		SA3.	measure and mark positions as per instructions
		Teamw	rork
		SA4.	share work load as required and co-ordinate with others
		SA5.	accept and interpret instructions and requirements correctly
В.	Professional Skills	Use of tools and machines	
		The use	er/individual on the job needs to know and understand how to:
		SB1.	use relevant tools, equipment and consumables for repair and maintenance
			of piping fixtures and fittings
		SB2.	operate, maintain and repair tools
		Repair and maintenance techniques	
		SB3.	carry out diagnosis and preparatory work as per requirement
		SB4.	replace pipes and fixtures so as to rectify the system
		SB5.	stack and store materials and equipment appropriately at the task site
		SB6.	test repaired fittings and fixtures

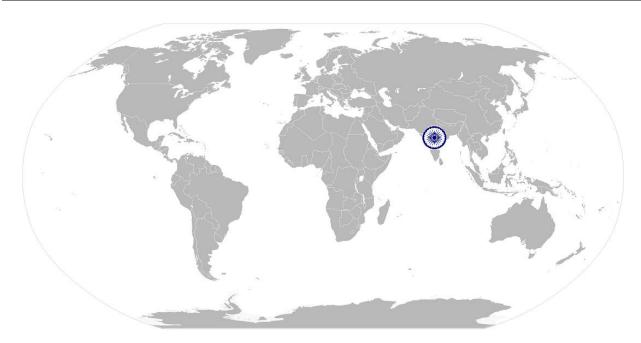






NOS Version Control

NOS Code	PSC/N0102		
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

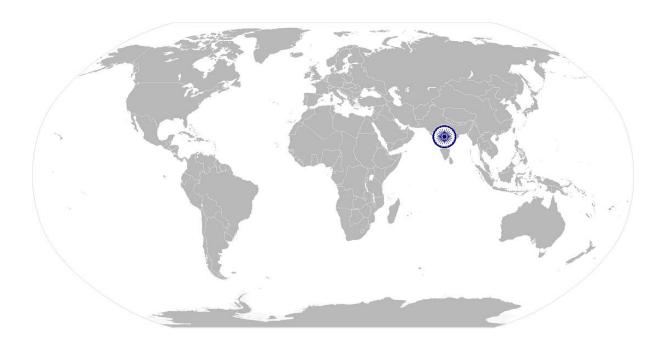








National Occupational Standard



Overview

This unit is about 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.







Unit Code	PSC/N0108		
Unit Title	Coordinating with the senior and other working team		
(Task)	Coordinating with the senior and other working team		
Description	OS unit is about communicating with colleagues and seniors in order to achieve		
	th and hazard free work flow		
Scope	This unit/task covers the following:		
	Interact with senior		
	receive work instructions, discuss task status and receive feedback		
	Interact with colleagues within and outside the team		
	 communicate and discuss work flow, problems faced, possible solutions and 		
	pass on the learning within and outside the team		
Performance Criteria(P			
Element	Performance Criteria		
Interaction with	To be competent, the user/individual on the job must be able to:		
senior	PC1. receive work instructions and raw materials from reporting senior		
	PC2. communicate to reporting senior about task status, repairs and maintenance		
	of tools and equipment as required		
	PC3. communicate any potential hazards and expected process disruptions		
	PC4. handover completed task to reporting senior		
	PC5. receive feedback from reporting senior		
	PC6. report any anticipated reasons for delays		
Interact with	PC7. work as a team with colleagues and share work as per the work load and skills		
colleagues within and	PC8. work with colleagues of other teams		
outside the team	PC9. communicate and discuss work flow related difficulties in order to find		
	solution with mutual agreement		
	PC10. taking instructions from the reporting senior		
	PC11. report problem/incident etc.		
	PC12. put team over individual goals		
	PC13. resolve conflicts		
Knowledge and Unders	Knowledge and Understanding (K)		
A. Organizational	The user/individual on the job needs to know and understand:		
Context	KA1. company's policies on: preferred language of communication, quality delivery		
	standards and personnel management		
	KA2. reporting structure		







B.	Technical	The user/individual on the job needs to know and understand:			
	Knowledge	KB1.	effective ways of communication		
		KB2.	building team co-ordination		
Ski	lls (S)				
A.	Core Skills/	Commi	unication skills		
	Generic Skills	The use	er/individual on the job needs to know and understand how to:		
		SA1.	communicate in Hindi / regional language		
		Teamw	vork		
		SA2.	share work load as required		
		SA3.	accept and interpret instructions and requirements correctly		
		SA4.	co-ordinate with co-workers and sub-ordinates		
В.	Professional Skills	Decision making			
		The use	er/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			

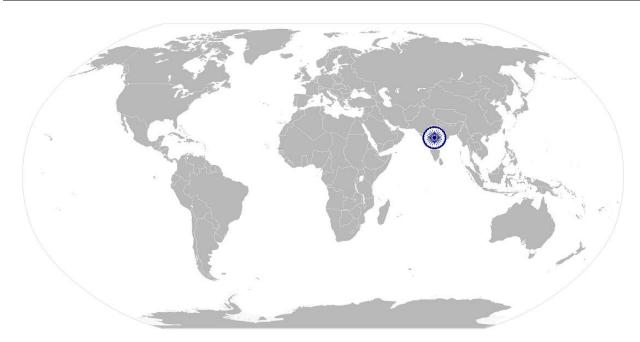






NOS Version Control

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

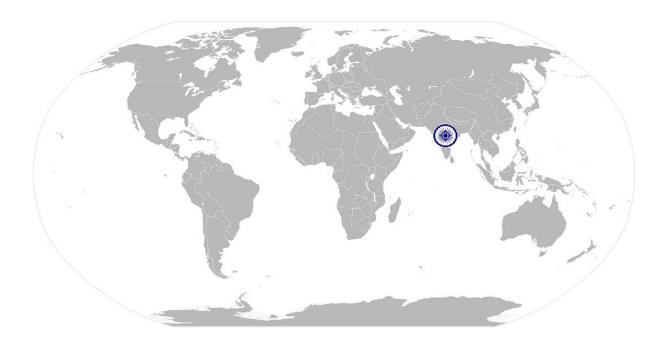








National Occupational Standard



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.







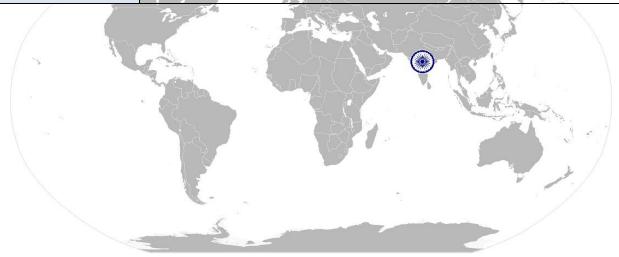
Unit Code	PSC/N0109		
Unit Title	Maintain a healthy, safe and secure working environment		
(Task)	Maintain a healthy, sale and secure working environment		
Description	This OS unit is about monitoring your working environment and making sure it meets		
	requirements for health and safety		
Scope	This unit/task covers the following:		
	Communicate to reporting senior about		
	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(P	Performance Criteria(PC) w.r.t. the Scope		
Element	Performance Criteria		
Communicating	To be competent, the user/individual on the job must be able to:		
potential accident	PC1. to avoid accidents related to use of sharp tools and equipment		
points	PC2. attend and actively participate in the alth and safety campaigns organized		
	by the company or any other authority		
Using safety gear and	PC3. use or wear safety gear (helmet, gloves, goggles, safety shoes, ear plugs, etc.)		
following healthy	as per the rules of the company		
practices	PC4. attend fire drills or any other safety drills organized by the company or any		
	other authority		
	PC5. learn first-aid procedure		
	PC6. use insect repellents and safe drinking water		
	PC7. use site toilets and follow other hygienic practices		
	PC8. understand the evacuation and emergency procedures		
Knowledge and Unders			
A. Organizational	The user/individual on the job needs to know and understand:		
Context	KA1. company's policy on: safety and hazards and personnel management		
	KA2. reporting structure		
B. Technical	The user/individual on the job needs to know and understand:		
Knowledge	KB1. how to use tools and equipment without suffering any physical harm		
	KB2. first-aid procedure		
	KB3. diseases caused due use of unsafe water, biting of insects and following		
	unhygienic practices		
	KB4. evacuation and emergency procedures		







Ski	lls (S)				
A.	Core Skills/	Communication skills The user/individual on the job needs to know and understand how to: SA1. effectively communicate the danger			
	Generic Skills				
		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			



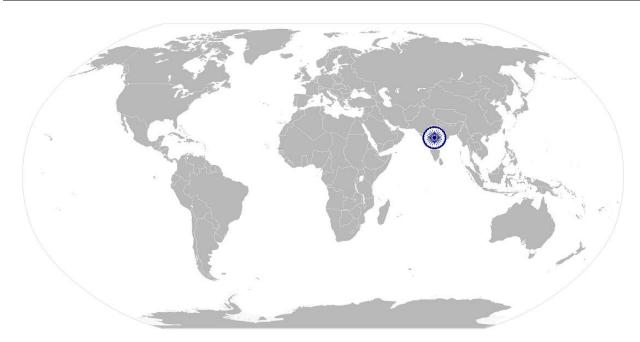






NOS Version Control

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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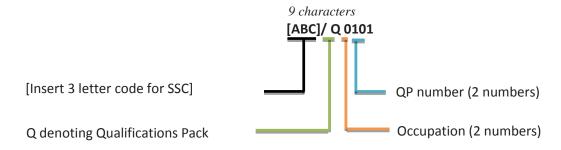




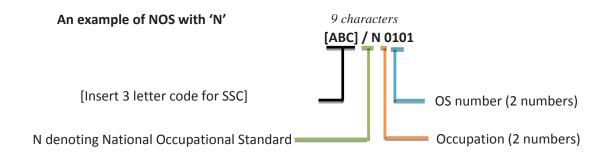
Annexure

Nomenclature for QP and NOS

Qualifications Pack



Occupational Standard





Qualifications Pack For Plumber (General)



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 Q P or N OS	N
Next two numbers	Occupation code	01
Next two numbers	OS number	01