

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

Contact Us:

Indian Plumbing Skills Council
B/ 168-169, DDA Complex
Okhla, Phase 1
New Delhi 110020, India
Phone: +91-11-41513580
+91-11-41400556
E-mail: ipssc@ipssc.co.in



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Introduction

Qualifications Pack – Plumber Pipeline

SECTOR: PLUMBING INDUSTRY

SUB-SECTOR: Contractors

OCCUPATION: Plumbing

REFERENCE ID: PSC/Q0107

ALIGNED TO: NCO-2004/7136.90

Plumber Pipeline: Plumber Pipeline is an important job role in installation and repair of pipelines in 'contractors' segment.

Brief Job Description: A Plumber (Pipeline) is responsible for installation and repair of internal as well as basic external pipes 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/Q0107 | | |
| | Job Role | Plumber Pipeline | | |
| | 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 |

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| Job Role | Plumber Pipeline |
| Role Description | Responsible for install and repair internal as well as basic external pipes in housing, 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. |
| Applicable National Occupational Standards (NOS) | <p>Compulsory:</p> <ol style="list-style-type: none"> PSC/ N 0103 (Installation, repair & maintenance of internal and basic external piping systems) PSC/ N 0108 (Coordinating with the senior and other working team) PSC/ N 0109 (Maintain a healthy, safe and secure working environment) <p>Optional:</p> <ol style="list-style-type: none"> N.A. |
| Performance Criteria | As described in the relevant OS units |

Definitions

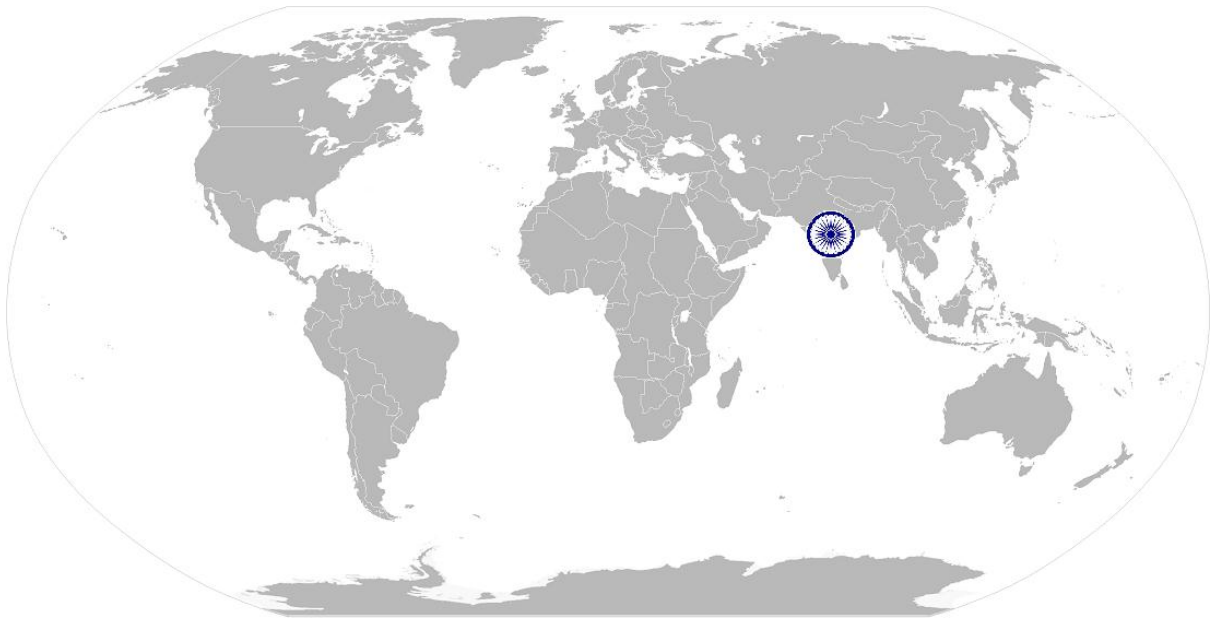
| Keywords /Terms | Description |
|-------------------------------|---|
| Sector | Sector is a conglomeration of different business operations having similar businesses and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests. |
| 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/N0103 Installation, repair & maintenance of internal and basic external piping systems

National Occupational Standard



Overview

This unit is about installing, repair and maintenance of internal and basic external pipeline networks in housing, commercial and institutional setups.



PSC/N0103 Installation, repair & maintenance of internal and basic external piping systems

National Occupational Standard

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| Unit Code | PSC/N0103 |
| Unit Title (Task) | Installation, repair and maintenance of internal and basic external piping systems |
| Description | This OS is unit is about installing, repair and maintenance of internal and basic external pipeline networks in housing, commercial and institutional setups |
| Scope | <p>This unit/task covers the following:</p> <p>Installation</p> <ul style="list-style-type: none"> It covers the installation of internal and basic external piping systems <p>Repair and Maintenance</p> <ul style="list-style-type: none"> It covers repair and maintenance of internal and basic external piping systems |
| Performance Criteria(PC) w.r.t. the Scope | |
| Element | Performance Criteria |
| Installation | <p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. understand the task to be done</p> <p>PC2. assemble pipe sections, tubing and fittings, using couplings, clamps, screws, bolts, caulking, or cutting, threading and joining equipment</p> <p>PC3. establish the sequence of internal and external pipe installations</p> <p>PC4. Plan installation in or around obstructions such as electrical wiring, pavements, etc.</p> <p>PC5. locate and mark the position of pipe installations, connections, passage holes, and fixtures in structures, using measuring instruments such as rulers and levels</p> <p>PC6. cut openings in structures to accommodate pipes and pipe fittings, using hand and power tools (if required)</p> <p>PC7. measure, cut, thread, and bend pipe to required angle, using hand and power tools or equipment such as cutting, threading and bending equipment</p> <p>PC8. hang steel supports from ceiling joists to hold pipes in place (if required)</p> <p>PC9. install internal and external pipe assemblies, fittings, valves, appliances such as pressure-meter, water meter and water heaters, and fixtures such as sinks and toilets, using hand and power tools</p> <p>PC10. connect internal piping network with external service mains such as water and sewerage lines</p> <p>PC11. External levels and standard bench marks with respect to sewerage and drainage</p> <p>PC12. test the joints and fixtures for proper functioning</p> |



PSC/N0103 Installation, repair & maintenance of internal and basic external piping systems

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| | PC13. clear the work area and waste disposal |
| Repair & Maintenance | <p>PC14. understand the installed plumbing system</p> <p>PC15. identify the problem/fault in the system and its cause</p> <p>PC16. establish the sequence of repair/maintenance</p> <p>PC17. assemble fittings, fixtures and tools required for the task</p> <p>PC18. locate and mark the position of the component to be replaced/repaired, using measuring instruments such as rulers and levels</p> <p>PC19. cut openings in structures to remove defected pipes and pipe fittings, using hand and power tools</p> <p>PC20. measure, cut, thread, and bend pipes to required angle, using hand and power tools or equipment such as cutting, threading and bending equipment</p> <p>PC21. replace with new pipe assemblies, fittings, and fixtures</p> <p>PC22. repair internal piping network connections with external service mains such as water and sewerage lines</p> <p>PC23. test the pipe joints and fixtures for proper functioning</p> <p>PC24. clear the work area and waste disposal</p> |
| Quality of output | <p>PC25. deliver the task in time</p> <p>PC26. achieve quality finishing in repair of piping systems and fittings</p> <p>PC27. ensure minimal wastage of material and damage to other systems</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. importance of the individual's role in the work flow</p> <p>KA3. risk and impact of not following defined procedures/work instructions</p> <p>KA4. how to handover/ takeover of the equipment / work area as per the instructions</p> |
| B. Technical Knowledge | <p>The user/individual on the job needs to know and understand:</p> <p>KB1. complete knowledge of establishing levels and slopes of drainage and sewerage piping</p> <p>KB2. distinguish between levels and distances of water and sewer lines</p> <p>KB3. service line networks such as water and sewer mains and its connection norms</p> <p>KB4. different types of materials (CI/GI/PVC pipes, etc.), basic sanitary fittings (valves, clamps, elbows, etc.) and fixtures (showers, taps, basins, etc.)</p> <p>KB5. techniques related to cutting, bending and joining of fittings and fixtures</p> <p>KB6. various types of defects such as leakages, improper alignment, etc.</p> <p>KB7. basic plumbing terminology</p> |



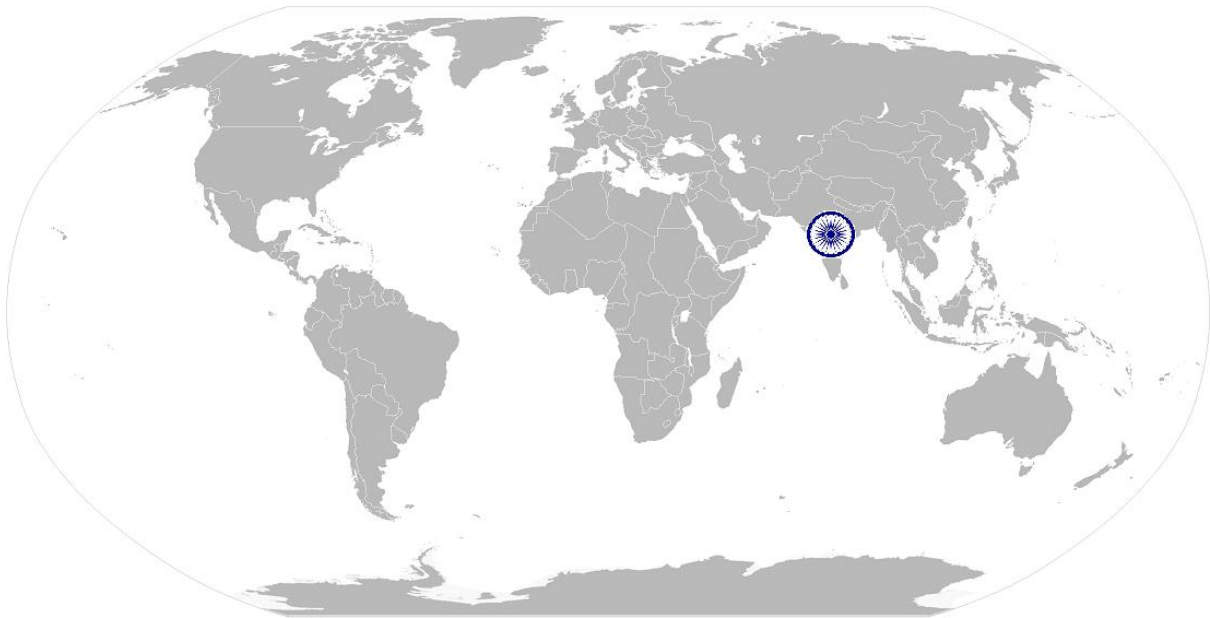
PSC/N0103 Installation, repair & maintenance of internal and basic external piping systems

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| | <p>KB8. 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>KB9. units of measurement</p> <p>KB10. material disposal procedure, importance of appropriate disposal of material</p> |
| 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 |
| | Measurement/positioning skills |
| | SA2. perform simple mathematical calculations |
| | SA3. measure and mark positions as per instructions |
| | SA4. connect internal piping with external mains as per the norms |
| Teamwork | |
| SA5. share work load as required | |
| SA6. accept and interpret instructions and requirements correctly | |
| SA7. co-ordinate with co-workers and subordinates | |
| B. Professional Skills | Use of tools and machines |
| | The user/individual on the job needs to know and understand how to: |
| | SB1. identify and use following key tools and equipment for installing and repairing internal and external piping fixtures and fittings: |
| | <ul style="list-style-type: none"> • Tape measure • Hack saw • Pipe bender • Screwdrivers • Pliers • Chisels • Allen keys • Files • Hammers • Wrenches • Threading tool • Caulking tool • Pipe cutters • 2ft level • Step ladder • Safety, Gloves/goggles/ear plugs |
| | SB2. operate, maintain and repair tools |
| | Installation techniques |
| | SB3. carry out pre-installation preparation as per requirement |
| | SB4. align and join pipes and fixtures as per requirement |
| | SB5. stack and store materials and equipment appropriately at the task site |
| | SB6. test installed fittings and fixtures |
| Repair and maintenance techniques | |



PSC/N0103 Installation, repair & maintenance of internal and basic external piping systems

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| | <p>SB7. carry out diagnosis and preparatory work as per requirement</p> <p>SB8. replace pipes and fixtures so as to rectify the system</p> <p>SB9. stack and store materials and equipment appropriately at the task site</p> <p>SB10. test repaired fittings and fixtures</p> |
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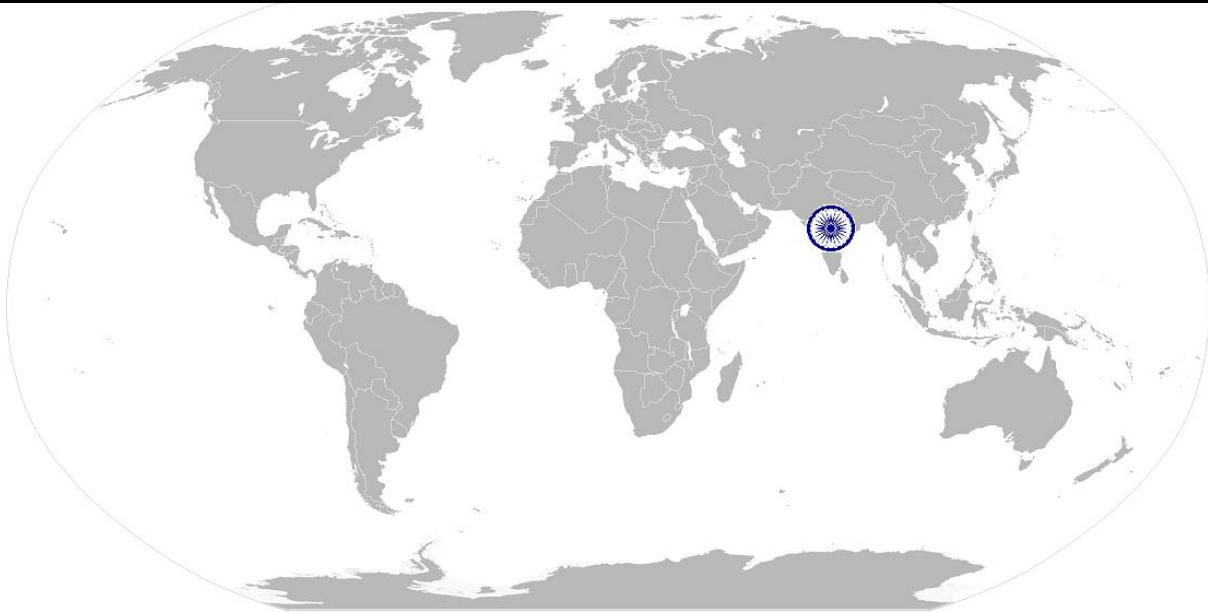




PSC/N0103 Installation, repair & maintenance of internal and basic external piping systems

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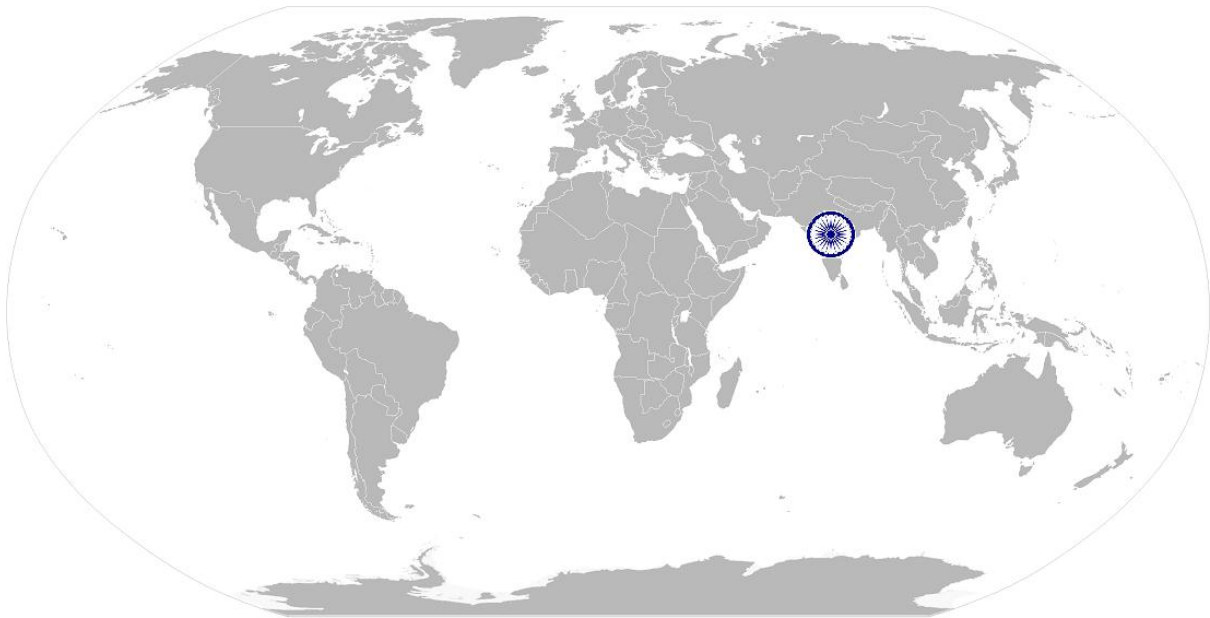
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| NOS Code | PSC /N0103 | | |
| Credits(NVEQF/NVQF/NSQF) [OPTIONAL] | TBD | Version number | 0.1 |
| Industry | Plumbing | Drafted on | 15/07/13 |
| Industry Sub-sector | Contractors | Last reviewed on | 30/07/13 |
| | | Next review date | 31/01/14 |





PSC/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.



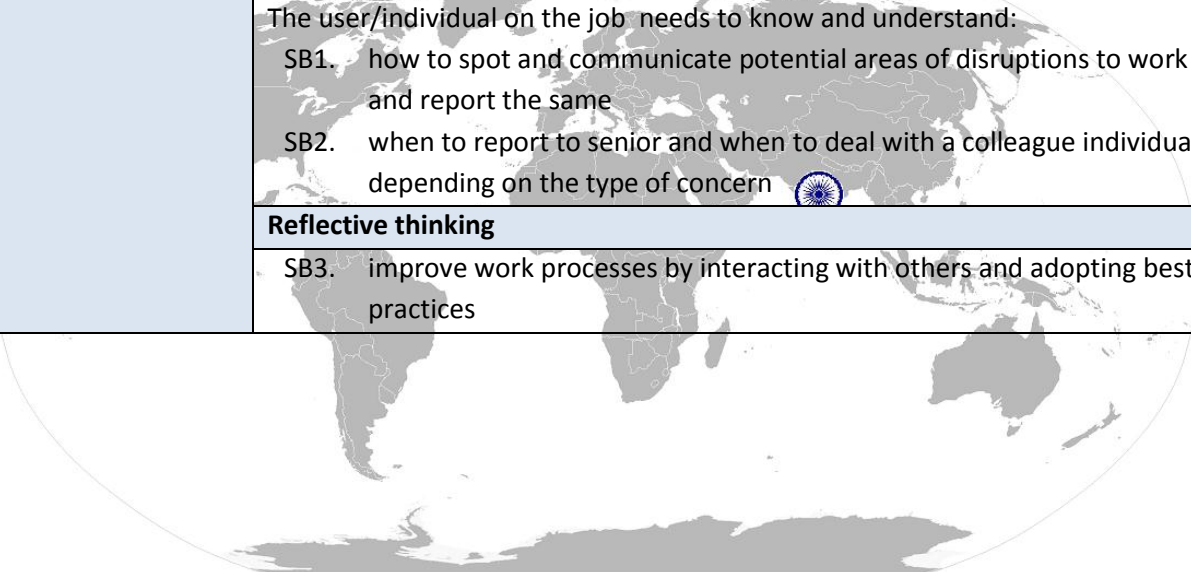
PSC/N0108 Coordinating with the senior and other working team

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| 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

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| B. Technical Knowledge | The user/individual on the job needs to know and understand: KB11. effective ways of communication KB12. 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 |

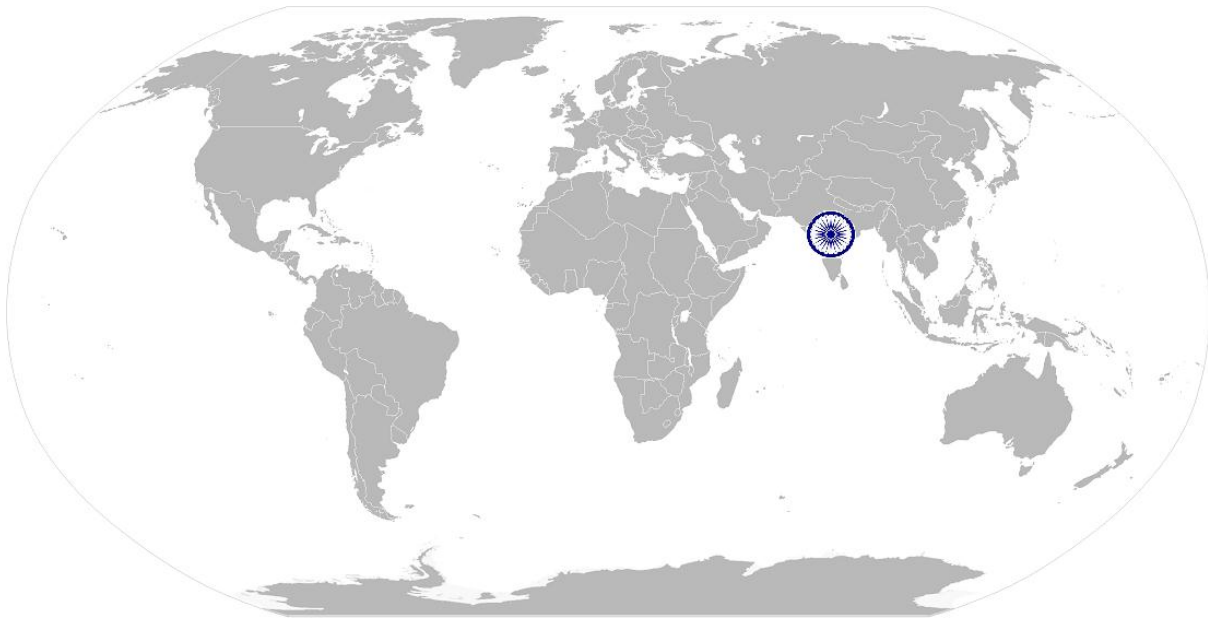




PSC/N0108 Coordinating with the senior and other working team

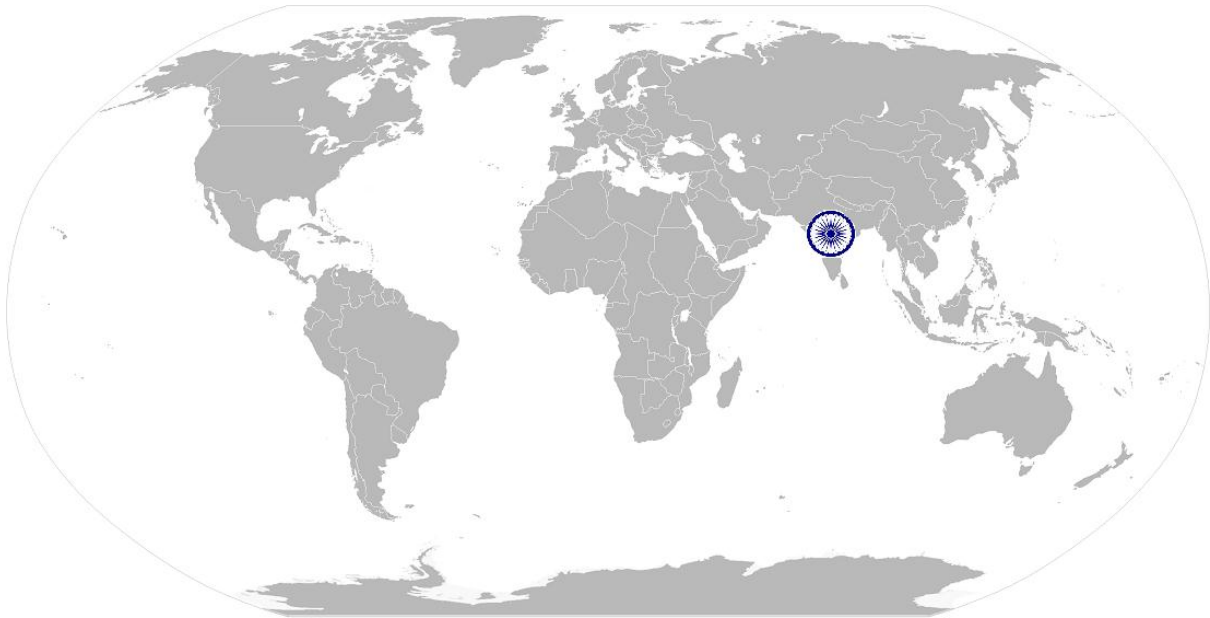
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| NOS Code | PSC/N0108 | | |
| Credits(NVEQF/NVQF/NSQF) [OPTIONAL] | TBD | Version number | 0.1 |
| Industry | Plumbing | Drafted on | 15/07/13 |
| Industry Sub-sector | Contractors | Last reviewed on | 30/07/13 |
| | | Next review date | 31/01/14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





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

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| 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) | |



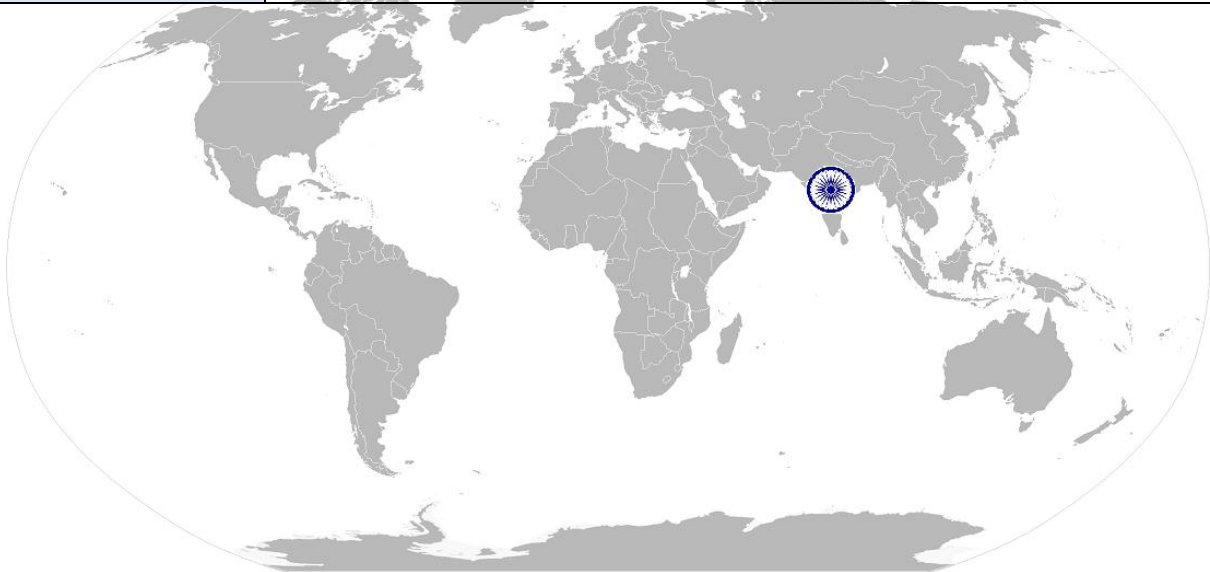
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National Occupational Standards



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

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|---|--|
| 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 |
| B. Professional Skills | SA2. keep all the tools in an organised manner so as to avoid accidents SA3. keep the work environment safe and clean |
| | 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 |





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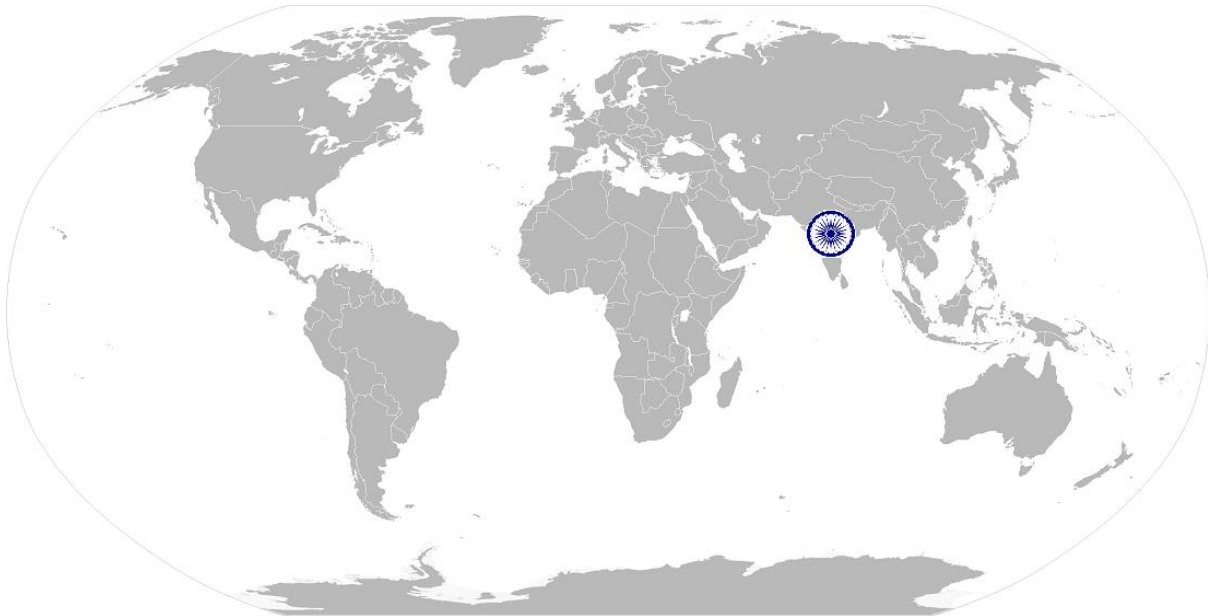
National Occupational Standards



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

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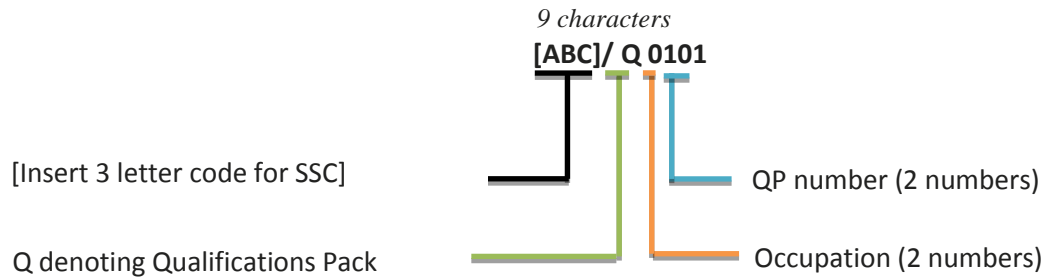
| NOS Code | PSC /N0109 | | |
|--|-------------|------------------|----------|
| Credits(NVEQF/NVQF/NSQF) [OPTIONAL] | TBD | Version number | 0.1 |
| Industry | Plumbing | Drafted on | 15/07/13 |
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| | | Next review date | 31/01/14 |



Annexure

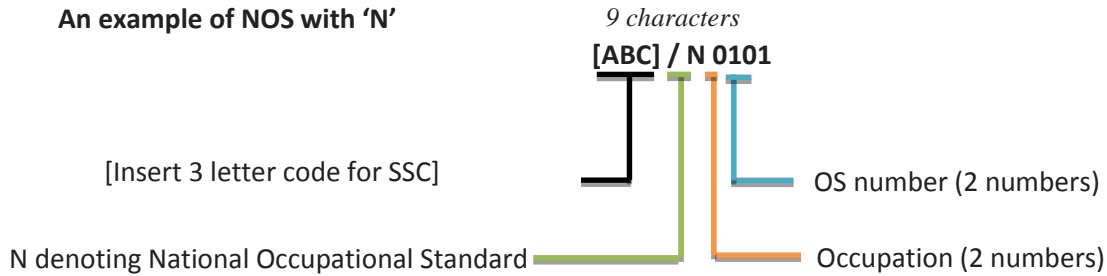
Nomenclature for QP and NOS

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 |