



Plumber - General

QP Code: PSC/Q0104

Version: 4.0

NSQF Level: 4

Water Management and Plumbing Skill Council || Unit No-606, DLF Prime Tower
Okhla Phase-1 New Delhi-110020

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PSC/Q0104: Plumber - General

Brief Job Description

The Plumber - General installs sewage and drainage systems, water supply systems, general and advanced sanitary fittings and fixtures in housing, commercial and institutional setups. The Plumber-General also maintains the plumbing systems and fixtures for housing setups.

Personal Attributes

The individual must be able to work independently and be comfortable in performing laborious work. The person should be good at following instructions and a team player with a positive attitude.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. [PSC/N0130: Prepare for Plumbing Installations and Maintenance](#)
2. [PSC/N0131: Install Water Supply Systems](#)
3. [PSC/N0132: Install Drainage Systems](#)
4. [PSC/N0133: Install Plumbing Fixtures](#)
5. [PSC/N0142: Perform Troubleshooting and Maintenance for Domestic Plumbing Fixtures and Systems](#)
6. [PSC/N0136: Apply Health and Safety Practices at the Workplace](#)
7. [PSC/N0137: Work Effectively with Others](#)
8. [DGT/VSQ/N0102: Employability Skills \(60 Hours\)](#)

Qualification Pack (QP) Parameters

Sector	Plumbing
Sub-Sector	Industrial / Non-Industrial Plumbing
Occupation	Plumbing Systems Installation and Maintenance, Plumbing Systems Installation and Maintenance
Country	India

NSQF Level	4
Credits	15
Aligned to NCO/ISCO/ISIC Code	NCO-2015/7126.0101
Minimum Educational Qualification & Experience	<p>12th grade Pass OR Pursuing 3rd year of 3-year diploma after 10th OR 10th grade pass with 1 year NTC plus CITS (or NAC) OR 8th grade pass with 2 year NTC plus 1 year NAC plus 1 year CITS OR Previous relevant Qualification of NSQF Level (3 as Assistant Plumber - General with 8th Grade Pass) with 2 Years of experience Relevant</p>
Minimum Level of Education for Training in School	10th Class
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 Years
Last Reviewed On	NA
Next Review Date	NA
NSQC Approval Date	
Version	4.0

PSC/N0130: Prepare for Plumbing Installations and Maintenance

Description

This unit is about identification of tasks, organisation of materials and preparation of work area for starting the plumbing work.

Scope

The scope covers the following :

- Prepare for work

Elements and Performance Criteria

Prepare for work

To be competent, the user/individual on the job must be able to:

- PC1.** collect plumbing material as per type, size and quantities based on specifications from drawings and plans
- PC2.** check if the tools and equipment are functioning properly and inform relevant authority in case of any issues
- PC3.** clear the area of hazardous substances, debris and waste as per organisational norms
- PC4.** store collected materials to be used in a secure manner ensuring there is no spillage or cross-contamination
- PC5.** place signages and barricades as required to ensure safety and security of work area, workers and visitors
- PC6.** plan tasks in agreement with others while adhering to time commitments.

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** standards, policies, and procedures followed in the company relevant to employment and performance conditions
- KU2.** organization's departments, hierarchy, products, services
- KU3.** workplace safety requirements, hazard reporting and handling procedures
- KU4.** commonly used scales, symbols, terminologies, abbreviations, titles, sub-titles, dimensions, reference dates used by plumbers
- KU5.** measurements and standards relevant to the plumbing industry
- KU6.** types and purpose of drawings and plans associated with plumbing
- KU7.** tools, equipment and materials relative to drawings/specifications
- KU8.** importance of accuracy in measurements and calculations
- KU9.** purpose of work schedules, work plans, charts, work bulletins and memos and the work-related information that can be obtained from them
- KU10.** mathematical formulas needed to calculate area, length, perimeter, diameter, circumference, volume, mass, force, pressure, scales, ratios etc.

- KU11.** categories of materials and their safe handling, storage and transport requirements
- KU12.** measures to avoid air and water contamination, erosion and sedimentation
- KU13.** types of plumbing waste and their disposal

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** prepare checklists, reports and fill out forms in local language or Hindi/English
- GS2.** perform arithmetic calculations of addition, subtraction, multiplication and division processes
- GS3.** read and interpret information (symbols, dimensions, terminology, dates etc.) given in local language or Hindi
- GS4.** state information, doubts and concerns about work related matters in local language or Hindi/English
- GS5.** plan one's daily tasks to achieve maximum productivity
- GS6.** establish priorities and deadlines in consultation with others and record them
- GS7.** be punctual and work as per agreed priorities
- GS8.** manage distractions and maintain workplace discipline
- GS9.** listen to customer's concerns and doubts carefully and address them
- GS10.** be courteous
- GS11.** identify ways to increase productivity and reduce errors

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Prepare for work</i>	30	49	14	7
PC1. collect plumbing material as per type, size and quantities based on specifications from drawings and plans	6	9	3	2
PC2. check if the tools and equipment are functioning properly and inform relevant authority in case of any issues	6	9	3	2
PC3. clear the area of hazardous substances, debris and waste as per organisational norms	5	7	2	0.5
PC4. store collected materials to be used in a secure manner ensuring there is no spillage or cross-contamination	5	9	2	1
PC5. place signages and barricades as required to ensure safety and security of work area, workers and visitors	4	7	2	0.5
PC6. plan tasks in agreement with others while adhering to time commitments.	4	8	2	1
NOS Total	30	49	14	7

National Occupational Standards (NOS) Parameters

NOS Code	PSC/N0130
NOS Name	Prepare for Plumbing Installations and Maintenance
Sector	Plumbing
Sub-Sector	Industrial / Non-Industrial Plumbing
Occupation	Plumbing Systems Installation and Maintenance
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	16/07/2020
Next Review Date	27/05/2026
NSQC Clearance Date	27/05/2021

PSC/N0131: Install Water Supply Systems

Description

This unit is about installing the assembled pipes, fittings and other components of a water supply system and, ensuring their proper functioning.

Scope

The scope covers the following :

- Prepare for piping process
- Cut, bend and assemble various types of pipes
- Install the assembled pipes, fittings and other water supply components
- Post-installation activities

Elements and Performance Criteria

Prepare for piping process

To be competent, the user/individual on the job must be able to:

- PC1.** determine the fitting requirements to install the pipes
- PC2.** measure and mark dimensions for fabrication on the pipes and fittings making allowances for spring-back, distortion and assembly

Cut, bend and assemble various types of pipes

To be competent, the user/individual on the job must be able to:

- PC3.** cut various types of pipes to the length determined
- PC4.** cut threads on metal pipe ends to the appropriate length
- PC5.** bend and form the pipes to specified angle and offsets
- PC6.** prepare pipe ends using techniques such as reaming, leveling, filing and grinding
- PC7.** join different types of pipes using fittings and relevant techniques
- PC8.** ensure the assembled pipe meets the required specifications
- PC9.** report any difficulties that may arise
- PC10.** carry out the corrective actions

Install the assembled pipes fittings and other water supply components

To be competent, the user/individual on the job must be able to:

- PC11.** identify the area and route where the assembled pipes are to be installed
- PC12.** perform chase cutting, drilling and nailing on a range of building material such as brickwork, concrete, block work, timber etc.
- PC13.** install pipes and other water supply components according to given specifications and site requirements without damage or interference to the surrounding structures
- PC14.** repair the cut area of the wall after installing pipes and other water supply components

Post-installation activities

To be competent, the user/individual on the job must be able to:

- PC15.** check if all the water supply system installations are properly aligned, sized, supported and functioning properly

- PC16.** identify and rectify faults that are within limits of expertise and authority and escalate others to authorized personnel
- PC17.** clear the work area and dispose, reuse or recycle left over materials according to regulations and, codes of practice
- PC18.** clean and store tools and equipment according to manufacturer's recommendations and workplace procedures

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** standards, policies, and procedures followed in the company relevant to employment and performance conditions
- KU2.** organization's departments, hierarchy, products, services
- KU3.** workplace safety requirements, hazard reporting and handling procedures
- KU4.** processes and components of municipal, residential, and private water distribution systems
- KU5.** properties of water, including pressure and flow rates
- KU6.** capillary action, thermal expansion and fabrication techniques to prevent leaking in
- KU7.** electrolysis and problems associated with the use of dissimilar metals
- KU8.** types of documents containing water supply plans and how to extract relevant information from them
- KU9.** standard plumbing symbols used in sketches and blueprints
- KU10.** various techniques of installing the water piping system in a building such as over ground piping, underground piping, piping embedded in
- KU11.** concrete, concealed piping, wall mounted piping
- KU12.** standards applicable to the piping installation in plumbing
- KU13.** types, characteristics and the application of different pipe fittings and fixture supports, and the fixing and jointing techniques
- KU14.** process of mains supply of water in buildings
- KU15.** layout of piping systems
- KU16.** supports, hangers and restraints used in water supply systems
- KU17.** plumbing tools, equipment and hardware (studs, bolts and nuts)
- KU18.** standard measuring procedures such as center to center, end to center, and end to end
- KU19.** impact of accurate marking out on fabrication process, work time and finished work quality
- KU20.** characteristics of metal used in various plumbing materials and the fabrication methods compatible with them
- KU21.** measuring and marking out processes and allowances to be considered for fabrication of pipes
- KU22.** various fit off processes and their tools and principles
- KU23.** installation process of pipes and fittings for various plumbing applications
- KU24.** test procedures to check proper functioning of the pipework installed
- KU25.** pre commissioning checks and procedures
- KU26.** application of mechanical and hydraulic principles for clearing blockages
- KU27.** corrosion protection such as coatings and tape

KU28. procedure to rectify faults such as air lock in the pipes and pipe blockages

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** prepare checklists, reports and fill out forms in local language or Hindi/English
- GS2.** measure all dimensions in metric scale
- GS3.** perform arithmetic calculations of addition, subtraction, multiplication and division processes
- GS4.** read and interpret information (symbols, dimensions, terminology, dates etc.) given in local language or Hindi
- GS5.** state information, doubts and concerns about work related matters in local language or Hindi/English
- GS6.** plan one's daily tasks to achieve maximum productivity
- GS7.** be punctual and work as per agreed priorities
- GS8.** listen to customer's concerns and doubts carefully and address them
- GS9.** be courteous and polite with customers and team members
- GS10.** establish workable solutions for problems in hand in consultation with others and record them
- GS11.** breakdown relevant work process into its constituent activities for ease of analysis
- GS12.** identify ways to increase productivity and reduce error

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Prepare for piping process</i>	2	6	2	1
PC1. determine the fitting requirements to install the pipes	1	3	1	0.5
PC2. measure and mark dimensions for fabrication on the pipes and fittings making allowances for spring-back, distortion and assembly	1	3	1	0.5
<i>Cut, bend and assemble various types of pipes</i>	12	20	6	2.5
PC3. cut various types of pipes to the length determined	2	5	1	0.5
PC4. cut threads on metal pipe ends to the appropriate length	1	2	1	0.2
PC5. bend and form the pipes to specified angle and offsets	2	3	1	0.5
PC6. prepare pipe ends using techniques such as reaming, leveling, filing and grinding	2	3	1	0.5
PC7. join different types of pipes using fittings and relevant techniques	2	3	1	0.5
PC8. ensure the assembled pipe meets the required specifications	1	2	1	0.3
PC9. report any difficulties that may arise	1	1	-	-
PC10. carry out the corrective actions	1	1	-	-
<i>Install the assembled pipes fittings and other water supply components</i>	8	12	3	2
PC11. identify the area and route where the assembled pipes are to be installed	2	3	1	0.5
PC12. perform chase cutting, drilling and nailing on a range of building material such as brickwork, concrete, block work, timber etc.	4	6	1	1

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. install pipes and other water supply components according to given specifications and site requirements without damage or interference to the surrounding structures	2	3	1	0.5
PC14. repair the cut area of the wall after installing pipes and other water supply components	-	-	-	-
<i>Post-installation activities</i>	8	11	3	1.5
PC15. check if all the water supply system installations are properly aligned, sized, supported and functioning properly	3	4	1	0.5
PC16. identify and rectify faults that are within limits of expertise and authority and escalate others to authorized personnel	3	4	1	0.5
PC17. clear the work area and dispose, reuse or recycle left over materials according to regulations and, codes of practice	1	2	0.5	-
PC18. clean and store tools and equipment according to manufacturer's recommendations and workplace procedures	1	1	0.5	0.5
NOS Total	30	49	14	7

National Occupational Standards (NOS) Parameters

NOS Code	PSC/N0131
NOS Name	Install Water Supply Systems
Sector	Plumbing
Sub-Sector	Industrial / Non-Industrial Plumbing
Occupation	Plumbing Systems Installation and Maintenance
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	16/07/2020
Next Review Date	27/05/2026
NSQC Clearance Date	27/05/2021

PSC/N0132: Install Drainage Systems

Description

This unit deals in detail with the installation of drainage systems in accordance with the industry standards and site requirements.

Scope

The scope covers the following :

- Prepare for installation of drainage systems
- Perform installation of drainage systems
- Post-installation activities

Elements and Performance Criteria

Prepare for installation of drainage systems

To be competent, the user/individual on the job must be able to:

- PC1.** identify the type of drainage piping systems and its components to be installed as appropriate for the type of building
- PC2.** use plumbing project plans to determine the location of various drainage components and the route of the water drainage piping and traps
- PC3.** calculate quantity, dimensions and type of materials required from design drawings/specifications
- PC4.** construct chambers to accommodate drainage systems
- PC5.** determine fitting requirements for installing various types of drainage pipes according to given specifications and site requirements
- PC6.** check if the area is prepared for laying the pipes for underground, above ground and overhead piping systems

Perform installation of drainage systems

To be competent, the user/individual on the job must be able to:

- PC7.** install the various components of drainage system such as various pipes and their fittings, manholes, traps, cleanouts, catch basins, inspection chamber, soak pit etc.
- PC8.** perform fitting activities on various types of pipes such as stoneware (SW) pipes, polyvinyl chloride (PVC) pipes etc.
- PC9.** install stormwater and sub-soil drainage system
- PC10.** install different types of pumps used in sanitary and drainage systems such as submersible water pumps, dewatering pumps (for rainwater piping) etc.
- PC11.** install pipework for water and sewage treatment plant

Post-installation activities

To be competent, the user/individual on the job must be able to:

- PC12.** test the installations for proper functioning
- PC13.** repair faulty drainage pipes and traps
- PC14.** ensure that all inspection openings and covers are fitted according to relevant standards and job specifications

- PC15.** backfill excavated areas to secure the installation
- PC16.** put required signages at the site after the plumbing task has been completed
- PC17.** clear the work area and dispose, reuse or recycle left over materials according to legislation, regulations, codes of practice and job specification
- PC18.** clean and store tools and equipment according to manufacturer's recommendations and workplace procedures

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** standards, policies, and procedures followed in the company relevant to employment and performance conditions
- KU2.** organization's departments, hierarchy, products, services
- KU3.** workplace safety requirements, hazard reporting and handling procedures
- KU4.** plan documents containing drainage details
- KU5.** how to identify the standard plumbing symbols used in sketches and blueprints
- KU6.** techniques of installing the water piping system in a building such as over ground piping, underground piping, piping embedded in concrete, concealed piping, wall mounted piping
- KU7.** installing wastewater and drainage plumbing for various fixtures
- KU8.** function of each component of a drainage system
- KU9.** standards applicable to the piping installation in plumbing
- KU10.** properties of water, including pressure and flow rates
- KU11.** capillary action, thermal expansion and fabrication techniques to prevent leaking installations
- KU12.** electrolysis and problems associated with the use of dissimilar metals
- KU13.** characteristics and the application of different pipe fittings and fixture supports, including fixing and jointing techniques
- KU14.** process of mains supply of water and drainage
- KU15.** layout of piping systems and types and grades of pipes and fittings
- KU16.** description of soil waste pipe, siphon pipe and vent pipe and their importance
- KU17.** types of supports, hangers and restraints, their properties and grades of fastening hardware such as studs, bolts and nuts
- KU18.** types of flooring for installations and levelling
- KU19.** piping and plumbing tools and equipment
- KU20.** standard measuring procedures such as center to center, end to center, and end to end
- KU21.** impact of accurate marking out on fabrication process, work time and finished work quality
- KU22.** measuring and marking dimensions and allowances on the pipes for fabrication
- KU23.** plumbing materials characteristics of various metal materials and their compatibility with different fabrication method
- KU24.** various fit off processes and their tools and principles
- KU25.** installation process of pipes and fittings for various plumbing applications
- KU26.** test procedures to check proper functioning of the pipework installed

- KU27.** pre commissioning checks and procedures
- KU28.** application of mechanical and hydraulic principles for clearing blockages
- KU29.** corrosion protection such as coatings and tape
- KU30.** air lock and blockage removal in the pipes

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** prepare checklists, reports and fill out forms in local language or Hindi/English
- GS2.** measure all dimensions used in plumbing in metric scale
- GS3.** perform arithmetic calculations of addition, subtraction, multiplication and division processes
- GS4.** read and interpret information (symbols, dimensions, terminology, dates etc.) given in local language or Hindi
- GS5.** state information, doubts and concerns about work related matters in local language or Hindi/English
- GS6.** plan one's daily tasks to achieve maximum productivity
- GS7.** be punctual and work as per agreed priorities
- GS8.** listen to customer's concerns and doubts carefully and address them
- GS9.** be courteous and polite with customers and team members
- GS10.** establish workable solutions for problems in hand in consultation with others and record them
- GS11.** breakdown relevant work process into its constituent activities for ease of analysis
- GS12.** identify ways to increase productivity and reduce errors

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Prepare for installation of drainage systems</i>	11	17	5	2.5
PC1. identify the type of drainage piping systems and its components to be installed as appropriate for the type of building	2.5	3	-	0.5
PC2. use plumbing project plans to determine the location of various drainage components and the route of the water drainage piping and traps	1	3	1	0.5
PC3. calculate quantity, dimensions and type of materials required from design drawings/specifications	3	3	1	0.5
PC4. construct chambers to accommodate drainage systems	1	2	1	0.5
PC5. determine fitting requirements for installing various types of drainage pipes according to given specifications and site requirements	2.5	4	1	-
PC6. check if the area is prepared for laying the pipes for underground, above ground and overhead piping systems	1	2	1	0.5
<i>Perform installation of drainage systems</i>	11	24	5	2.5
PC7. install the various components of drainage system such as various pipes and their fittings, manholes, traps, cleanouts, catch basins, inspection chamber, soak pit etc.	3	7	1	1
PC8. perform fitting activities on various types of pipes such as stoneware (SW) pipes, polyvinyl chloride (PVC) pipes etc.	3	7	1	0.5
PC9. install stormwater and sub-soil drainage system	2	4	1	0.5
PC10. install different types of pumps used in sanitary and drainage systems such as submersible water pumps, dewatering pumps (for rainwater piping) etc.	2	4	1	0.5
PC11. install pipework for water and sewage treatment plant	1	2	1	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Post-installation activities</i>	8	8	4	2
PC12. test the installations for proper functioning	2	2	1	-
PC13. repair faulty drainage pipes and traps	1	1.5	1	0.5
PC14. ensure that all inspection openings and covers are fitted according to relevant standards and job specifications	1	2	1	0.5
PC15. backfill excavated areas to secure the installation	1	1	1	0.5
PC16. put required signages at the site after the plumbing task has been completed	1	0.5	-	-
PC17. clear the work area and dispose, reuse or recycle left over materials according to legislation, regulations, codes of practice and job specification	1	0.5	-	-
PC18. clean and store tools and equipment according to manufacturer's recommendations and workplace procedures	1	0.5	-	0.5
NOS Total	30	49	14	7

National Occupational Standards (NOS) Parameters

NOS Code	PSC/N0132
NOS Name	Install Drainage Systems
Sector	Plumbing
Sub-Sector	Industrial / Non-Industrial Plumbing
Occupation	Plumbing Systems Installation and Maintenance
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	16/07/2020
Next Review Date	27/05/2026
NSQC Clearance Date	27/05/2021

PSC/N0133: Install Plumbing Fixtures

Description

This unit deals in detail with installing plumbing fixtures in accordance with industry standards and site requirements.

Scope

The scope covers the following :

- Prepare for installation of fixtures
- Install sanitary fixtures, support and related accessories
- Perform post-Installation activities

Elements and Performance Criteria

Prepare for installation of fixtures

To be competent, the user/individual on the job must be able to:

- PC1.** tally the count and quality of fixtures, parts, support material provided in the packing with the manufacturer's list or order form
- PC2.** select size, type and quantity of fixture and trim for specific application according to given specifications
- PC3.** locate and mark the position of fixtures and fixture supports in structures

Install sanitary fixtures, support and related accessories

To be competent, the user/individual on the job must be able to:

- PC4.** cut the physical structures such as walls, concrete in line with correct markings and specifications for performing internal pipe installations
- PC5.** install supports for plumbing piping using appropriate fasteners to ensure grade, spacing and alignment
- PC6.** install fixtures as per specifications without damage to fixture, pipework, the surrounding environment etc.
- PC7.** Install and secure the sensor for touchless fittings and fixtures in the slot provided slot.
- PC8.** insert batteries for sensor-based fittings and fixtures safely and in compliance to manufacturer's specifications
- PC9.** connect fixture to water supply, drainage and electricity supply ensuring proper functioning, safety and compliance to manufacturer's specifications

Perform post-Installation activities

To be competent, the user/individual on the job must be able to:

- PC10.** plumb and level the supports and fixtures installed to ensure alignment and balance
- PC11.** check if all installations are properly sized, supported and functioning
- PC12.** identify and rectify faults that are within limits of expertise and authority and escalate others to authorized personnel
- PC13.** clear the work area and dispose, reuse or recycle left over materials according to regulations and codes of practice

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** organization's policies on quality and delivery standards, safety and hazards, integrity, dress code, etc.
- KU2.** individual's role in the workflow
- KU3.** risk and impact of not following defined procedures/work instructions
- KU4.** standards, regulations and codes of practice relevant to the plumbing industry
- KU5.** alignment and elevation techniques used in plumbing systems
- KU6.** types of plumbing related fixtures, supports (such as carriers, blocking and wall hangers) and fasteners (such as anchors, bolts and clamps)
- KU7.** tools and equipment such as hand tools including adjustable wrench, ball-peen hammer, basin wrench, chalk line, chisel, file, hacksaw, level, pliers, lineman, needle nose, water pump, groove lock, plumb bob, pry bars, rubber mallet, screwdrivers (complete set) and power tools such as power drill and screw gun
- KU8.** lifting/load shifting equipment including ladders, height scaffolding, elevated work platforms, hand trolleys, hoists and jacks
- KU9.** sealants and adhesives, plumber's putty
- KU10.** characteristics, materials, finishes, uses, limitations and performance measures of plumbing related fixtures
- KU11.** plumbing for various types of water closets
- KU12.** types of urinal, description of flushing, devices, lipper automatic tanks
- KU13.** principles of siphon ball valves in a flushing system
- KU14.** types of wash basin, sinks, kitchen sink sizes and its description
- KU15.** types of fittings and fixtures that come with sensors
- KU16.** basic working principal of sensor faucet
- KU17.** principles of solenoid ball valves and sensors in touchless system
- KU18.** accessories required for installing wash basin, sizes of mirror, glass shelf, towel rail
- KU19.** description and sizes of pantry and laundry sinks, their waste outlets, bathtubs and its accessories
- KU20.** importance of introducing the traps of the sanitary fittings, both deep seal traps and low seal traps
- KU21.** conservancy system and water carriage system and the combination system
- KU22.** correct practices for installing plumbing fixtures
- KU23.** codes, standards and regulations applicable for the installation of plumbing fixtures

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** prepare checklists, reports and fill out forms in local language or Hindi/English
- GS2.** measure all dimensions used in plumbing in metric scale
- GS3.** perform arithmetic calculations of addition, subtraction, multiplication and division processes

- GS4.** read and interpret information (symbols, dimensions, terminology, dates etc.) given in local language or Hindi
- GS5.** state information, doubts and concerns about work related matters in local language or Hindi/English
- GS6.** plan one's daily tasks to achieve maximum productivity
- GS7.** be punctual and work as per agreed priorities
- GS8.** listen to customer's concerns and doubts carefully and address them
- GS9.** be courteous and polite with customers and team members
- GS10.** establish workable solutions for problems in hand in consultation with others and record them
- GS11.** breakdown relevant work process into its constituent activities for ease of analysis
- GS12.** identify ways to increase productivity and reduce errors

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Prepare for installation of fixtures</i>	8	12	3	2
PC1. tally the count and quality of fixtures, parts, support material provided in the packing with the manufacturer's list or order form	2	3	1	0.5
PC2. select size, type and quantity of fixture and trim for specific application according to given specifications	3	4	1	0.5
PC3. locate and mark the position of fixtures and fixture supports in structures	3	5	1	1
<i>Install sanitary fixtures, support and related accessories</i>	16	28	7	3
PC4. cut the physical structures such as walls, concrete in line with correct markings and specifications for performing internal pipe installations	3	6	1	-
PC5. install supports for plumbing piping using appropriate fasteners to ensure grade, spacing and alignment	3	6	1	1
PC6. install fixtures as per specifications without damage to fixture, pipework, the surrounding environment etc.	3	6	1	1
PC7. Install and secure the sensor for touchless fittings and fixtures in the slot provided slot.	2	2	1	0.5
PC8. insert batteries for sensor-based fittings and fixtures safely and in compliance to manufacturer's specifications	2	2	1	-
PC9. connect fixture to water supply, drainage and electricity supply ensuring proper functioning, safety and compliance to manufacturer's specifications	3	6	2	0.5
<i>Perform post-Installation activities</i>	6	9	4	2
PC10. plumb and level the supports and fixtures installed to ensure alignment and balance	2	2	1	0.5

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC11. check if all installations are properly sized, supported and functioning	1	3	1	1
PC12. identify and rectify faults that are within limits of expertise and authority and escalate others to authorized personnel	2	3	1	0.5
PC13. clear the work area and dispose, reuse or recycle left over materials according to regulations and codes of practice	1	1	1	-
NOS Total	30	49	14	7

National Occupational Standards (NOS) Parameters

NOS Code	PSC/N0133
NOS Name	Install Plumbing Fixtures
Sector	Plumbing
Sub-Sector	Industrial / Non-Industrial Plumbing
Occupation	Plumbing Systems Installation and Maintenance
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	16/07/2020
Next Review Date	27/05/2026
NSQC Clearance Date	27/05/2021

PSC/N0142: Perform Troubleshooting and Maintenance for Domestic Plumbing Fixtures and Systems

Description

This unit deals in detail with performing maintenance activities, identifying and rectifying faults in domestic plumbing systems and fixtures as per the standards.

Scope

The scope covers the following :

- Identify faults in domestic plumbing systems and fixtures
- Perform repair and maintenance activities
- Post-maintenance activities

Elements and Performance Criteria

Identify faults in domestic plumbing systems and fixtures

To be competent, the user/individual on the job must be able to:

- PC1.** detect blockages and damage in plumbing pipes, fitting and fixtures
- PC2.** conduct hydro test for checking leakages and pressure levels within piping systems
- PC3.** apply required water pressure to check joints in piping systems
- PC4.** identify causes of water pressure or water flow problems

Perform repair and maintenance activities

To be competent, the user/individual on the job must be able to:

- PC5.** rectify fault in case pipework is faulty
- PC6.** remove air lock and blockages in the pipes that are installed
- PC7.** repair and maintain water supply tanks and valves
- PC8.** unclog drains and drain's strainer baskets
- PC9.** repair broken sewer, dripping faucets and fixtures that are not working properly
- PC10.** resolve leakages, loosening and jamming of fittings
- PC11.** implement measures to reduce noise in pipes and fixtures
- PC12.** inspect and maintain the septic systems on a timely basis
- PC13.** perform basic services for appliances such as water heaters, washing machines and dishwashers etc.

Post-maintenance activities

To be competent, the user/individual on the job must be able to:

- PC14.** clean up spills quickly after the task has been completed
- PC15.** empty waste containers as per organisational procedures
- PC16.** discard oily rags and flammable materials as per industry practices
- PC17.** record daily logs in a specified format for activities such as maintenance and installation
- PC18.** guide customers on proper care and maintenance of plumbing systems

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** organization's policies on quality and delivery standards, safety and hazards, integrity, dress code, etc.
- KU2.** risk and impact of not following defined procedures/work instructions
- KU3.** organisational requirements of documentation for work
- KU4.** organisational policies on repair work w.r.t. cost, time, material, process, etc.
- KU5.** standards, regulations and codes of practice relevant to the plumbing industry
- KU6.** types of plumbing related tools, equipment, fixtures, pipes, fittings, supports, fasteners, etc.
- KU7.** various pipes used in plumbing such as metal pipes cast iron (CI), galvanised iron (GI), plastic pipes , polyvinyl chloride (PVC) pipes, chlorinated polyvinyl chloride (cPVC) , stoneware pipes, soft, semi soft and hard temper
- KU8.** characteristics, materials, finishes, uses, limitations and performance measures of plumbing related fixtures
- KU9.** SI system of measurement
- KU10.** properties of water, including pressure and flow rates
- KU11.** mathematical formulas needed to calculate pipe length and piping offsets
- KU12.** capillary action, thermal expansion and fabrication techniques to prevent leaking installations
- KU13.** characteristics and the application of different pipe fittings and fixture supports, including fixing and jointing techniques
- KU14.** process of mains supply of water and drainage and their plumbing
- KU15.** layout of piping systems
- KU16.** various fit off processes and their tools and principles
- KU17.** common plumbing problems with respect to fixtures, pipes and fittings and their remedial and preventive measures
- KU18.** test procedures to check proper functioning of the fixtures and pipework installed
- KU19.** application of mechanical and hydraulic principles for clearing blockages
- KU20.** corrosion protection such as coatings and tape
- KU21.** correct practices for troubleshooting and maintenance for plumbing fixtures and systems

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** write common words/signs and set phrases used in the work
- GS2.** prepare checklists, reports and fill out forms in local language or Hindi/English
- GS3.** measure all dimensions used in plumbing in metric scale
- GS4.** perform arithmetic calculations of addition, subtraction, multiplication and division processes
- GS5.** read and interpret information (symbols, dimensions, terminology, dates etc.) given in local language or Hindi

- GS6.** state information, doubts and concerns about work related matters in local language or Hindi/English
- GS7.** spot discrepancies or errors and select the most efficient solution
- GS8.** plan one's daily tasks to achieve maximum productivity
- GS9.** be punctual and work as per agreed priorities
- GS10.** listen to customer's concerns and doubts carefully and address them
- GS11.** be courteous and polite in communications with customers and team
- GS12.** establish workable solutions for problems in hand in consultation with others and record them
- GS13.** identify ways to improve quality of work and reduce errors

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Identify faults in domestic plumbing systems and fixtures</i>	6	12	3	1.5
PC1. detect blockages and damage in plumbing pipes, fitting and fixtures	2	3	1	0.5
PC2. conduct hydro test for checking leakages and pressure levels within piping systems	2	3	1	0.5
PC3. apply required water pressure to check joints in piping systems	1	3	0.5	0.5
PC4. identify causes of water pressure or water flow problems	1	3	0.5	-
<i>Perform repair and maintenance activities</i>	22	28	7	4
PC5. rectify fault in case pipework is faulty	2	3	0.5	0.5
PC6. remove air lock and blockages in the pipes that are installed	2	3	0.5	0.5
PC7. repair and maintain water supply tanks and valves	3	3	1	0.5
PC8. unclog drains and drain's strainer baskets	3	3	1	0.5
PC9. repair broken sewer, dripping faucets and fixtures that are not working properly	3	3	1	0.5
PC10. resolve leakages, loosening and jamming of fittings	2	3	1	-
PC11. implement measures to reduce noise in pipes and fixtures	2	3	1	0.5
PC12. inspect and maintain the septic systems on a timely basis	2	3	0.5	0.5
PC13. perform basic services for appliances such as water heaters, washing machines and dishwashers etc.	3	4	0.5	0.5
<i>Post-maintenance activities</i>	2	9	4	1.5
PC14. clean up spills quickly after the task has been completed	1	2	1	0.5

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC15. empty waste containers as per organisational procedures	1	1	1	-
PC16. discard oily rags and flammable materials as per industry practices	-	2	1	0.5
PC17. record daily logs in a specified format for activities such as maintenance and installation	-	2	1	0.5
PC18. guide customers on proper care and maintenance of plumbing systems	-	2	-	-
NOS Total	30	49	14	7

National Occupational Standards (NOS) Parameters

NOS Code	PSC/N0142
NOS Name	Perform Troubleshooting and Maintenance for Domestic Plumbing Fixtures and Systems
Sector	Plumbing
Sub-Sector	Industrial / Non-Industrial Plumbing
Occupation	Plumbing Systems Installation and Maintenance
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	16/07/2020
Next Review Date	27/05/2026
NSQC Clearance Date	27/05/2021

PSC/N0136: Apply Health and Safety Practices at the Workplace

Description

This unit is about following safety procedures, communicating potential hazards and dangers of accidents on the job.

Scope

The scope covers the following :

- Follow safety measures to avoid accidents
- Daily inspection of tools and equipment
- Deal with emergencies

Elements and Performance Criteria

Follow safety measures to avoid accidents

To be competent, the user/individual on the job must be able to:

- PC1.** identify risks and hazards at the workplace
- PC2.** wear personal protective equipment (PPE) as per the type of plumbing work
- PC3.** place protective barricades and signages around the pits and trenches
- PC4.** isolate the plumbing fittings and fixtures from electrical wiring to avoid accidents
- PC5.** adhere to organisational procedures for reporting hazards and incidents to relevant authorities
- PC6.** establish ventilation before entering underground work areas
- PC7.** work safely in and around trenches, elevated places and confined areas
- PC8.** ensure tools and hazardous materials are not left unattended
- PC9.** ensure good housekeeping in order to prevent hazards e.g. fire
- PC10.** dispose waste materials and used PPE according to regulations and codes of practice

Follow hygiene and sanitation practices

To be competent, the user/individual on the job must be able to:

- PC11.** follow recommended personal hygiene and sanitation practices, for example, washing/sanitizing hands, covering face with a bent elbow while coughing/sneezing etc.
- PC12.** clean and disinfect work area, materials/supplies, equipment etc. before and after use.
- PC13.** report hygiene and sanitation issues to appropriate authority

Use tools, equipment and materials safely

To be competent, the user/individual on the job must be able to:

- PC14.** check that the tools, equipment and materials are in good condition and as per industry standards before use
- PC15.** use power tools and machinery that are grounded
- PC16.** replace or repair split or loose tools before use
- PC17.** store and transport various plumbing materials safely

Deal with emergencies

To be competent, the user/individual on the job must be able to:

- PC18.** follow workplace emergency and evacuation procedures
- PC19.** use a fire extinguisher correctly
- PC20.** use safe methods to free a person from electrocution
- PC21.** administer appropriate first aid (such as CPR etc.) to victims in case of cuts, bleeding, burns, choking, electric shock, poisoning etc.

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** possible causes of risk, hazard or accident in the workplace
- KU2.** organisational procedures for upkeep of tools and plumbing materials, health and safety
- KU3.** location of all the general health and safety equipment in the workplace
- KU4.** meaning of hazards and risks
- KU5.** hazardous environment encountered during work such as underground areas, elevated areas, areas with water and electricity supply, presence of biological waste, under construction sites etc.
- KU6.** work practices and precautions to control and prevent risks, hazards and accidents
- KU7.** importance of each personal protective equipment used such as eye protection mask, hard hats, gloves, apron, rubber boots etc.
- KU8.** tools and plumbing equipment as per latest industry standards
- KU9.** preventative and remedial actions to be taken in case of exposure to toxic materials
- KU10.** specific safety and health related problems faced in domestic, commercial and institutional setups
- KU11.** various causes of fire and precautionary activities to prevent the fire accident
- KU12.** techniques of using the different fire extinguishers
- KU13.** rescue techniques applied during a fire hazard
- KU14.** various types of safety signs and meaning
- KU15.** appropriate basic first aid treatment relevant to the condition e.g. shock, electrical shock, bleeding, minor burns, poisoning, eye injuries etc.
- KU16.** potential injuries and ill health associated with incorrect handling of tools and equipment

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** write an accident/incident report in local language or English
- GS2.** read and comprehend labels, charts, signages, manuals, plumbing symbols etc.
- GS3.** question coworkers appropriately in order to clarify instructions and other issues
- GS4.** plan and organize the work schedule, work area, tools, equipment and materials for improved productivity
- GS5.** determine key considerations and priorities when faced with problems

- GS6.** seek official and authorised sources of help and guidance to resolve problems that cannot be solved at one's level of authority

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Follow safety measures to avoid accidents</i>	13	32	-	3
PC1. identify risks and hazards at the workplace	2	2	-	0.5
PC2. wear personal protective equipment (PPE) as per the type of plumbing work	2	2	-	0.5
PC3. place protective barricades and signages around the pits and trenches	1	4	-	0.5
PC4. isolate the plumbing fittings and fixtures from electrical wiring to avoid accidents	1	4	-	-
PC5. adhere to organisational procedures for reporting hazards and incidents to relevant authorities	2	4	-	0.5
PC6. establish ventilation before entering underground work areas	1	4	-	-
PC7. work safely in and around trenches, elevated places and confined areas	1	3	-	-
PC8. ensure tools and hazardous materials are not left unattended	1	3	-	-
PC9. ensure good housekeeping in order to prevent hazards e.g. fire	1	3	-	0.5
PC10. dispose waste materials and used PPE according to regulations and codes of practice	1	3	-	0.5
<i>Follow hygiene and sanitation practices</i>	3	8	-	1
PC11. follow recommended personal hygiene and sanitation practices, for example, washing/sanitizing hands, covering face with a bent elbow while coughing/sneezing etc.	1	3	-	0.5
PC12. clean and disinfect work area, materials/supplies, equipment etc. before and after use.	1	3	-	0.5
PC13. report hygiene and sanitation issues to appropriate authority	1	2	-	-
<i>Use tools, equipment and materials safely</i>	6	9	-	1

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC14. check that the tools, equipment and materials are in good condition and as per industry standards before use	1	3	-	0.25
PC15. use power tools and machinery that are grounded	1	2	-	0.25
PC16. replace or repair split or loose tools before use	2	2	-	0.25
PC17. store and transport various plumbing materials safely	2	2	-	0.25
<i>Deal with emergencies</i>	8	14	-	2
PC18. follow workplace emergency and evacuation procedures	2	3	-	0.5
PC19. use a fire extinguisher correctly	2	4	-	0.5
PC20. use safe methods to free a person from electrocution	2	3	-	0.5
PC21. administer appropriate first aid (such as CPR etc.) to victims in case of cuts, bleeding, burns, choking, electric shock, poisoning etc.	2	4	-	0.5
NOS Total	30	63	-	7

National Occupational Standards (NOS) Parameters

NOS Code	PSC/N0136
NOS Name	Apply Health and Safety Practices at the Workplace
Sector	Plumbing
Sub-Sector	Industrial / Non-Industrial Plumbing, Water Supply & Water Treatment & Quality Control, Sewerage & Sewage Treatment, Drainage, Water Harvesting & Ground Recharging, Firefighting & Safety Systems, Gas & Piping (Industrial / Medical), HVAC & Steam, Manufacturing of Plumbing / Firefighting Products, Micro-Hydel Power
Occupation	Plumbing Systems Installation and Maintenance, Designing, Sales, Material Handling, Plumbing Servicing, Plumbing Plant Operations
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	24/02/2022
Next Review Date	24/02/2026
NSQC Clearance Date	24/02/2022

PSC/N0137: Work Effectively with Others

Description

This unit covers basic etiquette and competencies required in behavior and interactions with others at the workplace.

Scope

The scope covers the following :

- Communicate effectively
- Work in a team effectively
- Respect diversity

Elements and Performance Criteria

Communicate effectively

To be competent, the user/individual on the job must be able to:

- PC1.** obtain complete information and instructions
- PC2.** seek clarifications from appropriate source when required
- PC3.** provide information accurately and clearly
- PC4.** use inclusive language (verbal, non-verbal and written) that is gender, disability and culturally sensitive

Work in a team effectively

To be competent, the user/individual on the job must be able to:

- PC5.** prioritize tasks as required
- PC6.** consult with and assist others to maximize effectiveness and efficiency in carrying out tasks
- PC7.** escalate grievances and problems to appropriate authority as per procedure to resolve them and avoid conflict
- PC8.** act upon constructive feedback from others

Respect diversity

To be competent, the user/individual on the job must be able to:

- PC9.** transact with everyone without any personal bias based on gender, disability, caste, religion, colour, sexual orientation and culture
- PC10.** recognize indicators of harassment and discrimination based on gender, disability, caste, religion, colour, sexual orientation and culture at workplace
- PC11.** report incidents of harassment and discrimination to appropriate authority

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** legislation, standards, policies, and procedures followed in the company relevant to employment, behavior, harassment, discrimination and performance conditions
- KU2.** reporting structure, inter-dependent functions, lines and procedures in the work area

- KU3.** escalation matrix and procedures for reporting work and employment related issues
- KU4.** types of harassment and discrimination based on gender, disability, caste, religion and culture and how to recognize it.
- KU5.** importance of effective communication and the impact of poor communication on the employee, the employer and the customer
- KU6.** importance of teamwork in organizational and individual success
- KU7.** various components of effective communication such as tone and pitch
- KU8.** importance of ethics and discipline for professional success
- KU9.** how to express and address grievances appropriately and effectively
- KU10.** importance and ways of managing interpersonal conflict effectively
- KU11.** different types of disabilities and the challenges faced by persons with disability (PwD)
- KU12.** laws, acts and provisions defined for PwD by the statutory bodies
- KU13.** government and private schemes and benefits available for PwD
- KU14.** Importance of gender sensitivity and equality.
- KU15.** gender, disability and cultural biases, stereotypes and impact on others
- KU16.** gender and its concepts such as gender roles, gender spectrum, gender as an identity
- KU17.** legislations, grievance redressal mechanisms, and penalties against harassment in the workplace

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** write clear and legible notes, keep records, prepare to-do lists and take down instructions
- GS2.** write basic numbers, quantities and basic work-related terminology for operational requirements in the local language and English
- GS3.** read basic terminologies to accurately interpret labels, supervisor's instructions in the local language and English
- GS4.** read and interpret accurate information from work-related documents and various relevant work instructions and records in local
- GS5.** interact with the concerned personnel appropriately (correct protocol and manner of speaking etc.)
- GS6.** display active listening skills while interacting with co-workers and others in the workplace
- GS7.** deliver consistent and reliable service to internal and external customers
- GS8.** work with co-workers and supervisor to resolve any issues that threaten work quality as per the planned schedule

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Communicate effectively</i>	11	26	-	2
PC1. obtain complete information and instructions	3	8	-	-
PC2. seek clarifications from appropriate source when required	1	5	-	-
PC3. provide information accurately and clearly	3	7	-	1
PC4. use inclusive language (verbal, non-verbal and written) that is gender, disability and culturally sensitive	4	6	-	1
<i>Work in a team effectively</i>	11	25	-	3
PC5. prioritize tasks as required	3	8	-	1
PC6. consult with and assist others to maximize effectiveness and efficiency in carrying out tasks	3	8	-	1
PC7. escalate grievances and problems to appropriate authority as per procedure to resolve them and avoid conflict	3	4	-	1
PC8. act upon constructive feedback from others	2	5	-	-
<i>Respect diversity</i>	8	12	-	2
PC9. transact with everyone without any personal bias based on gender, disability, caste, religion, colour, sexual orientation and culture	3	5	-	1
PC10. recognize indicators of harassment and discrimination based on gender, disability, caste, religion, colour, sexual orientation and culture at workplace	3	5	-	1
PC11. report incidents of harassment and discrimination to appropriate authority	2	2	-	-
NOS Total	30	63	-	7

National Occupational Standards (NOS) Parameters

NOS Code	PSC/N0137
NOS Name	Work Effectively with Others
Sector	Plumbing
Sub-Sector	Industrial / Non-Industrial Plumbing, Water Supply & Water Treatment & Quality Control, Sewerage & Sewage Treatment, Drainage, Water Harvesting & Ground Recharging, Firefighting & Safety Systems, Gas & Piping (Industrial / Medical), HVAC & Steam, Manufacturing of Plumbing / Firefighting Products, Micro-Hydel Power
Occupation	Plumbing Systems Installation and Maintenance, Designing, Sales, Material Handling, Plumbing Servicing, Plumbing Plant Operations
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	24/02/2022
Next Review Date	24/02/2026
NSQC Clearance Date	24/02/2022

DGT/VSQ/N0102: Employability Skills (60 Hours)

Description

This unit is about employability skills, Constitutional values, becoming a professional in the 21st Century, digital, financial, and legal literacy, diversity and Inclusion, English and communication skills, customer service, entrepreneurship, and apprenticeship, getting ready for jobs and career development.

Scope

The scope covers the following :

- Introduction to Employability Skills
- Constitutional values - Citizenship
- Becoming a Professional in the 21st Century
- Basic English Skills
- Career Development & Goal Setting
- Communication Skills
- Diversity & Inclusion
- Financial and Legal Literacy
- Essential Digital Skills
- Entrepreneurship
- Customer Service
- Getting ready for Apprenticeship & Jobs

Elements and Performance Criteria

Introduction to Employability Skills

To be competent, the user/individual on the job must be able to:

- PC1.** identify employability skills required for jobs in various industries
- PC2.** identify and explore learning and employability portals

Constitutional values - Citizenship

To be competent, the user/individual on the job must be able to:

- PC3.** recognize the significance of constitutional values, including civic rights and duties, citizenship, responsibility towards society etc. and personal values and ethics such as honesty, integrity, caring and respecting others, etc.
- PC4.** follow environmentally sustainable practices

Becoming a Professional in the 21st Century

To be competent, the user/individual on the job must be able to:

- PC5.** recognize the significance of 21st Century Skills for employment
- PC6.** practice the 21st Century Skills such as Self-Awareness, Behaviour Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn for continuous learning etc. in personal and professional life

Basic English Skills

To be competent, the user/individual on the job must be able to:

- PC7.** use basic English for everyday conversation in different contexts, in person and over the telephone
- PC8.** read and understand routine information, notes, instructions, mails, letters etc. written in English
- PC9.** write short messages, notes, letters, e-mails etc. in English

Career Development & Goal Setting

To be competent, the user/individual on the job must be able to:

- PC10.** understand the difference between job and career
- PC11.** prepare a career development plan with short- and long-term goals, based on aptitude

Communication Skills

To be competent, the user/individual on the job must be able to:

- PC12.** follow verbal and non-verbal communication etiquette and active listening techniques in various settings
- PC13.** work collaboratively with others in a team

Diversity & Inclusion

To be competent, the user/individual on the job must be able to:

- PC14.** communicate and behave appropriately with all genders and PwD
- PC15.** escalate any issues related to sexual harassment at workplace according to POSH Act

Financial and Legal Literacy

To be competent, the user/individual on the job must be able to:

- PC16.** select financial institutions, products and services as per requirement
- PC17.** carry out offline and online financial transactions, safely and securely
- PC18.** identify common components of salary and compute income, expenses, taxes, investments etc
- PC19.** identify relevant rights and laws and use legal aids to fight against legal exploitation

Essential Digital Skills

To be competent, the user/individual on the job must be able to:

- PC20.** operate digital devices and carry out basic internet operations securely and safely
- PC21.** use e- mail and social media platforms and virtual collaboration tools to work effectively
- PC22.** use basic features of word processor, spreadsheets, and presentations

Entrepreneurship

To be competent, the user/individual on the job must be able to:

- PC23.** identify different types of Entrepreneurship and Enterprises and assess opportunities for potential business through research
- PC24.** develop a business plan and a work model, considering the 4Ps of Marketing Product, Price, Place and Promotion
- PC25.** identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the potential business opportunity

Customer Service

To be competent, the user/individual on the job must be able to:

- PC26.** identify different types of customers
- PC27.** identify and respond to customer requests and needs in a professional manner.
- PC28.** follow appropriate hygiene and grooming standards

Getting ready for apprenticeship & Jobs

To be competent, the user/individual on the job must be able to:

- PC29.** create a professional Curriculum vitae (Résumé)
- PC30.** search for suitable jobs using reliable offline and online sources such as Employment exchange, recruitment agencies, newspapers etc. and job portals, respectively
- PC31.** apply to identified job openings using offline /online methods as per requirement
- PC32.** answer questions politely, with clarity and confidence, during recruitment and selection
- PC33.** identify apprenticeship opportunities and register for it as per guidelines and requirements

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** need for employability skills and different learning and employability related portals
- KU2.** various constitutional and personal values
- KU3.** different environmentally sustainable practices and their importance
- KU4.** Twenty first (21st) century skills and their importance
- KU5.** how to use English language for effective verbal (face to face and telephonic) and written communication in formal and informal set up
- KU6.** importance of career development and setting long- and short-term goals
- KU7.** about effective communication
- KU8.** POSH Act
- KU9.** Gender sensitivity and inclusivity
- KU10.** different types of financial institutes, products, and services
- KU11.** how to compute income and expenditure
- KU12.** importance of maintaining safety and security in offline and online financial transactions
- KU13.** different legal rights and laws
- KU14.** different types of digital devices and the procedure to operate them safely and securely
- KU15.** how to create and operate an e- mail account and use applications such as word processors, spreadsheets etc.
- KU16.** how to identify business opportunities
- KU17.** types and needs of customers
- KU18.** how to apply for a job and prepare for an interview
- KU19.** apprenticeship scheme and the process of registering on apprenticeship portal

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** read and write different types of documents/instructions/correspondence
- GS2.** communicate effectively using appropriate language in formal and informal settings
- GS3.** behave politely and appropriately with all
- GS4.** how to work in a virtual mode



Qualification Pack



- GS5.** perform calculations efficiently
- GS6.** solve problems effectively
- GS7.** pay attention to details
- GS8.** manage time efficiently
- GS9.** maintain hygiene and sanitization to avoid infection

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Introduction to Employability Skills</i>	1	1	-	-
PC1. identify employability skills required for jobs in various industries	-	-	-	-
PC2. identify and explore learning and employability portals	-	-	-	-
<i>Constitutional values – Citizenship</i>	1	1	-	-
PC3. recognize the significance of constitutional values, including civic rights and duties, citizenship, responsibility towards society etc. and personal values and ethics such as honesty, integrity, caring and respecting others, etc.	-	-	-	-
PC4. follow environmentally sustainable practices	-	-	-	-
<i>Becoming a Professional in the 21st Century</i>	2	4	-	-
PC5. recognize the significance of 21st Century Skills for employment	-	-	-	-
PC6. practice the 21st Century Skills such as Self-Awareness, Behaviour Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn for continuous learning etc. in personal and professional life	-	-	-	-
<i>Basic English Skills</i>	2	3	-	-
PC7. use basic English for everyday conversation in different contexts, in person and over the telephone	-	-	-	-
PC8. read and understand routine information, notes, instructions, mails, letters etc. written in English	-	-	-	-
PC9. write short messages, notes, letters, e-mails etc. in English	-	-	-	-
<i>Career Development & Goal Setting</i>	1	2	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC10. understand the difference between job and career	-	-	-	-
PC11. prepare a career development plan with short- and long-term goals, based on aptitude	-	-	-	-
<i>Communication Skills</i>	2	2	-	-
PC12. follow verbal and non-verbal communication etiquette and active listening techniques in various settings	-	-	-	-
PC13. work collaboratively with others in a team	-	-	-	-
<i>Diversity & Inclusion</i>	1	2	-	-
PC14. communicate and behave appropriately with all genders and PwD	-	-	-	-
PC15. escalate any issues related to sexual harassment at workplace according to POSH Act	-	-	-	-
<i>Financial and Legal Literacy</i>	2	3	-	-
PC16. select financial institutions, products and services as per requirement	-	-	-	-
PC17. carry out offline and online financial transactions, safely and securely	-	-	-	-
PC18. identify common components of salary and compute income, expenses, taxes, investments etc	-	-	-	-
PC19. identify relevant rights and laws and use legal aids to fight against legal exploitation	-	-	-	-
<i>Essential Digital Skills</i>	3	4	-	-
PC20. operate digital devices and carry out basic internet operations securely and safely	-	-	-	-
PC21. use e- mail and social media platforms and virtual collaboration tools to work effectively	-	-	-	-
PC22. use basic features of word processor, spreadsheets, and presentations	-	-	-	-
<i>Entrepreneurship</i>	2	3	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC23. identify different types of Entrepreneurship and Enterprises and assess opportunities for potential business through research	-	-	-	-
PC24. develop a business plan and a work model, considering the 4Ps of Marketing Product, Price, Place and Promotion	-	-	-	-
PC25. identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the potential business opportunity	-	-	-	-
<i>Customer Service</i>	1	2	-	-
PC26. identify different types of customers	-	-	-	-
PC27. identify and respond to customer requests and needs in a professional manner.	-	-	-	-
PC28. follow appropriate hygiene and grooming standards	-	-	-	-
<i>Getting ready for apprenticeship & Jobs</i>	2	3	-	-
PC29. create a professional Curriculum vitae (Résumé)	-	-	-	-
PC30. search for suitable jobs using reliable offline and online sources such as Employment exchange, recruitment agencies, newspapers etc. and job portals, respectively	-	-	-	-
PC31. apply to identified job openings using offline /online methods as per requirement	-	-	-	-
PC32. answer questions politely, with clarity and confidence, during recruitment and selection	-	-	-	-
PC33. identify apprenticeship opportunities and register for it as per guidelines and requirements	-	-	-	-
NOS Total	20	30	-	-

National Occupational Standards (NOS) Parameters

NOS Code	DGT/VSQ/N0102
NOS Name	Employability Skills (60 Hours)
Sector	Cross Sectoral
Sub-Sector	Professional Skills
Occupation	Employability
NSQF Level	4
Credits	2
Version	1.0
Last Reviewed Date	NA
Next Review Date	25/11/2025
NSQC Clearance Date	17/11/2022

Assessment Guidelines and Assessment Weightage

Assessment Guidelines

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Element/ Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each Element/ PC.
2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC.
3. Assessment will be conducted for all compulsory NOS, and where applicable, on the selected elective/option NOS/set of NOS.
4. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below).
5. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/ training center based on these criteria.
6. To pass the Qualification Pack assessment, every trainee should score the Recommended Pass % aggregate for the QP.
7. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack.

Minimum Aggregate Passing % at QP Level : 70

(Please note: Every Trainee should score a minimum aggregate passing percentage as specified above, to successfully clear the Qualification Pack assessment.)

Assessment Weightage

Compulsory NOS

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
PSC/N0130.Prepare for plumbing installations and maintenance	30	49	14	7	100	10
PSC/N0131.Install Water Supply Systems	30	49	14	7	100	15
PSC/N0132.Install drainage systems	30	49	14	7	100	15
PSC/N0133.Install plumbing fixtures	30	49	14	7	100	15
PSC/N0142.Perform troubleshooting and maintenance for domestic plumbing fixtures and systems	30	49	14	7	100	15
PSC/N0136.Apply health and safety practices at the workplace.	30	63	-	7	100	10
PSC/N0137.Work effectively with others.	30	63	-	7	100	10
DGT/VSQ/N0102.Employability Skills (60 Hours)	20	30	-	-	50	10
Total	230	401	70	49	750	100

Acronyms

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training

Glossary

Sector	Sector is a conglomeration of different business operations having similar business 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.
Job role	Job role defines a unique set of functions that together form a unique employment opportunity in an organisation.
Occupational Standards (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 (KU) they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria (PC)	Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task.
National Occupational Standards (NOS)	NOS are occupational standards which apply uniquely in the Indian context.
Qualifications Pack (QP)	QP comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A QP is assigned a unique qualifications 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.
Scope	Scope is a 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 quality of performance required.
Knowledge and Understanding (KU)	Knowledge and Understanding (KU) are statements which together specify the technical, generic, professional and organisational specific knowledge that an individual needs in order to perform to the required standard.

Organisational Context	Organisational context includes the way the organisation 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/ Generic Skills (GS)	Core skills or Generic Skills (GS) are a group of skills that are the key to learning and working in today's world. These skills are typically needed in any work environment 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.
Electives	Electives are NOS/set of NOS that are identified by the sector as contributive to specialization in a job role. There may be multiple electives within a QP for each specialized job role. Trainees must select at least one elective for the successful completion of a QP with Electives.
Options	Options are NOS/set of NOS that are identified by the sector as additional skills. There may be multiple options within a QP. It is not mandatory to select any of the options to complete a QP with Options.