



Assistant Plumber - General

QP Code: PWD/PSC/Q0102

Version: 3.0

NSQF Level: 3

Skill Council for PwD || 501, City Centre, 5th Floor, 12/5, Plot 5, Sector 12, Dwaraka
New Delhi 110076

Adoption of Job Role for PwD : Job mapping is critical for skill training of PwD so that the livelihood

opportunity looks at him/ her not because he/ she is having a disability but because of the skill. Mapping with a disability involves research with subject matter experts (SMEs) with a view on the industry requirement without compromising on performance outcome. In cases, mapping is also supported by the use of assistive tools/ technology.

Expository Mapped Parameters

Sector	PwD
Originating SSC	Plumbing
Original QP code	PSC/Q0102
QP Version	3.0
Expository NSQF Level	3
Disability Type	Locomotor Disability Leprosy Cured Person Dwarfism Acid Attack Victims
Disability Category	Physical Disability/Physically Handicapped
Expository NSQC Approval Date	30/06/2022
Expository Next Review Date	19/06/2026

Expository Code	Expository Version	Expository Name	Minimum EntryCriteria	Expository Linked On
E001	1.0	Locomotor Disability	Ability to Read and Write with 5 years of Experience Or 5th Class Pass with 3 years of Experience Or 8th class pass with 1 year Experience or 8th class Pass +ITI or 8th Class Pass pursuing continuous regular schooling or 10th Class Pass with no experience or Previous relevant Qualification of NSQF Level 2 with 1 year experience. *5th class with No experience- OJT/internship of 12 months *8th class pass with no experience- OJT/internship of 4 months	30/06/2022

E004	1.0	Speech and Hearing Impairment	5th Class Pass with 3 years of Experience Or 8th class pass with 1 year Experience or 8th class Pass +ITI or 8th Class Pass pursuing continuous regular schooling or 10th Class Pass with no experience or Previous relevant Qualification of NSQF Level 2 with 1 year experience. *5th class with No experience- OJT/internship of 12 months *8th class pass with no experience- OJT/internship of 4 months	30/06/2022
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PSC/Q0102: Assistant Plumber - General

Brief Job Description

An Assistant Plumber - General assists the plumber in installation and repair of plumbing fittings and fixtures. The job role holder organises and hands over tools, clears work area, cuts and bends pipes as per the specified dimensions. The individual also supports the plumber with other tasks as per instructions received.

Personal Attributes

The individual must be able to perform laborious work, be good at receiving and following instructions, and be a good team player. The person must have good listening skills, be result oriented and have an eye for detail.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. [PSC/N0139: Carry out Support Activities for Plumbing Work](#)
2. [PSC/N0140: Maintain Plumbing Tools and Equipment](#)
3. [PSC/N0136: Apply Health and Safety Practices at the Workplace](#)
4. [PSC/N0137: Work Effectively with Others](#)
5. [SGJ/N1702: Optimize resource utilization at workplace](#)

Qualification Pack (QP) Parameters

Sector	Plumbing
Sub-Sector	Industrial / Non-Industrial Plumbing
Occupation	Plumbing Systems Installation and Maintenance
Country	India
NSQF Level	3
Aligned to NCO/ISCO/ISIC Code	NCO-2015/7126.0105
Minimum Educational Qualification & Experience	5th Class with 6 Months of experience as Plumber Helper

Minimum Level of Education for Training in School	9th Class
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 Years
Last Reviewed On	16/07/2020
Next Review Date	19/06/2025
NSQC Approval Date	27/05/2021
Version	3.0

PSC/N0139: Carry out Support Activities for Plumbing Work

Description

This unit describes how an assistant plumber supports the plumber in carrying out installation, repair and maintenance work.

Scope

The scope covers the following :

- Prepare for plumbing work
- Support in plumbing work

Elements and Performance Criteria

Prepare for plumbing work

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

- PC1. follow work instructions received from plumber or supervisor
- PC2. unpack pipes, fittings and fixtures as per manufacturer's guidelines and safety measures
- PC3. check quantity and quality of various plumbing materials and equipment present at the work site
- PC4. report any shortcomings of supplies against specifications or requirements

Support in plumbing work

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

- PC5. close or release water supply to the fixture and/or pipe being installed or repaired as per instructions of the plumber
- PC6. use hand and power tools for cutting, bending and assembling pipes and fittings in a safe manner
- PC7. perform cutting, bending and forming of Polyvinyl chloride (PVC), Chlorinated polyvinyl chloride (cPVC), Cross-linked polyethylene (PEX) and un-plasticized polyvinyl chloride, (uPVC) pipes as per the dimensions marked by the plumber
- PC8. assemble the fixture and/or pipework as per instructions
- PC9. secure the assembly using the fittings and fasteners as per instructions
- PC10. hold the pipework or fixture steadily during installation for the plumber when required
- PC11. clear work area and store tools and other plumbing materials safely and as per the specified guidelines

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1. organisational quality procedures and processes
- KU2. organisation's policies on delivery standards, safety and hazards, integrity, dress code, etc.
- KU3. individual's role in the workflow
- KU4. risk and impact of not following defined procedures/work instructions
- KU5. international System (SI) of measurement relevant to plumbing work

- KU6. characteristics and the application of different pipe fittings and fixture supports, including fixing and jointing techniques
- KU7. process of mains supply of water and drainage
- KU8. types and grades of pipes, fittings, fastening hardware (such as anchors, studs, bolts, clamps and nuts), supports, restraints, blocking and wall hangers and their properties
- KU9. various plumbing tools and equipment
- KU10. various pipe fit off processes and their tools and principles
- KU11. installation process of pipes and fittings for various plumbing applications
- KU12. fixture materials and finishes and uses and limitations of each
- KU13. corrosion protection ways such as applying coatings and using tape

Generic Skills (GS)

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

- GS1. write common plumbing symbols and brief notes in the local language and preferably English
- GS2. read and correctly interpret plumbing symbols and notes in local language and preferably English
- GS3. interpret verbal instructions and information about work related matters correctly
- GS4. state information, doubts and concerns about work related matters to co-workers and supervisors with clarity, in person and over the phone
- GS5. organize tools, materials and equipment on the basis of safety, availability, cleanliness, damage etc.
- GS6. plan work activities and communicate to others whose work plans and timelines may be affected
- GS7. be courteous to everyone irrespective of gender and disability
- GS8. identify problems at work and seek necessary support to resolve them following company policy
- GS9. identify how the shortcoming or defects in materials, supplies, tools and equipment can impact work quality and performance

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Prepare for plumbing work</i>	5	13	-	3
PC1. follow work instructions received from plumber or supervisor	1	3	-	1
PC2. unpack pipes, fittings and fixtures as per manufacturer's guidelines and safety measures	1	3	-	-
PC3. check quantity and quality of various plumbing materials and equipment present at the work site	2	4	-	1
PC4. report any shortcomings of supplies against specifications or requirements	1	3	-	1
<i>Support in plumbing work</i>	25	47	-	7
PC5. close or release water supply to the fixture and/or pipe being installed or repaired as per instructions of the plumber	2	3	-	1
PC6. use hand and power tools for cutting, bending and assembling pipes and fittings in a safe manner	4	7	-	1
PC7. perform cutting, bending and forming of Polyvinyl chloride (PVC), Chlorinated polyvinyl chloride (cPVC), Cross-linked polyethylene (PEX) and un-plasticized polyvinyl chloride, (uPVC) pipes as per the dimensions marked by the plumber	10	14	-	1
PC8. assemble the fixture and/or pipework as per instructions	3	8	-	1
PC9. secure the assembly using the fittings and fasteners as per instructions	2	5	-	1
PC10. hold the pipework or fixture steadily during installation for the plumber when required	2	5	-	1
PC11. clear work area and store tools and other plumbing materials safely and as per the specified guidelines	2	5	-	1
NOS Total	30	60	-	10

National Occupational Standards (NOS) Parameters

NOS Code	PSC/N0139
NOS Name	Carry out Support Activities for Plumbing Work
Sector	Plumbing
Sub-Sector	Industrial / Non-Industrial Plumbing
Occupation	Plumbing Systems Installation and Maintenance
NSQF Level	3
Credits	TBD
Version	1.0
Last Reviewed Date	16/07/2020
Next Review Date	27/05/2026
NSQC Clearance Date	27/05/2021

PSC/N0140: Maintain Plumbing Tools and Equipment

Description

This unit deals in detail with the upkeep and maintenance of various plumbing tools and equipment.

Scope

The scope covers the following :

- Perform maintenance work

Elements and Performance Criteria

Perform maintenance work

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

- PC1. apply suitable treatment method to remove rust and corrosion from damaged tools
- PC2. sharpen the bladed tools such as cutters, filers, pliers, chisels, etc. using method appropriate to the tool
- PC3. inspect the power tools to identify the extent and type of wear and damage
- PC4. repair, replace, discard worn out or damaged tools and accessories in a timely manner
- PC5. lubricate moving parts of the tools ensuring proper coverage and right amount of authorized lubricant, as per need and maintenance schedule
- PC6. dispose discarded oily rags and waste as per organizational procedure

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1. organisational quality procedures and processes
- KU2. organization's policies on delivery standards, safety and hazards, integrity, dress code, etc.
- KU3. individual's role in the workflow
- KU4. risk and impact of not following defined procedures/work instructions
- KU5. organisational procedures for issuing, returning, repair and maintenance of tools and plumbing materials, and recording and reporting damage, loss of tools/equipment
- KU6. usage of plumbing tools, equipment and materials
- KU7. methods for cleaning the tools that are suitable and approved by the industry
- KU8. importance of maintaining tools and indicators of damages and defects
- KU9. rusting and corrosion prevention techniques for plumbing tools and materials
- KU10. sharpening methods used in the plumbing industries
- KU11. treatment techniques for damaged tools and accessories in plumbing activities
- KU12. lubricants used in the plumbing industry as per the latest trends
- KU13. harm/damage (corrosion, rusting, wear and tear) caused to pipes by factors such as temperature, pH (acidity levels) and chemical composition, oxidation, ageing, etc.
- KU14. correct material disposal procedures for plumbing waste such as oily rags and other plumbing garbage

- KU15. new advanced tools, equipment and materials being introduced in the industry
- KU16. effect of the hazardous substances present at the plumbing sites and precautions to be taken while working with them
- KU17. usage of personal protective equipment (PPE) required for plumbing work and its importance

Generic Skills (GS)

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

- GS1. write common plumbing symbols and brief notes in the local language and preferably English
- GS2. read and correctly interpret plumbing symbols and notes in local language and preferably English
- GS3. interpret verbal instructions and information about work related matters correctly
- GS4. state information, doubts and concerns about work related matters to co-workers and supervisors with clarity, in person and over the phone
- GS5. organize tools, materials and equipment on the basis of safety, availability, cleanliness, damage etc.
- GS6. plan work activities and communicate to others whose work plans and timelines may be affected
- GS7. be courteous to everyone irrespective of gender and disability
- GS8. identify problems at work and seek necessary support to resolve them following company policy

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Perform maintenance work</i>	30	63	-	7
PC1. apply suitable treatment method to remove rust and corrosion from damaged tools	5	12	-	1
PC2. sharpen the bladed tools such as cutters, filers, pliers, chisels, etc. using method appropriate to the tool	6	12	-	1
PC3. inspect the power tools to identify the extent and type of wear and damage	6	10	-	1
PC4. repair, replace, discard worn out or damaged tools and accessories in a timely manner	4	8	-	1
PC5. lubricate moving parts of the tools ensuring proper coverage and right amount of authorized lubricant, as per need and maintenance schedule	3	7	-	1
PC6. dispose discarded oily rags and waste as per organizational procedure	6	14	-	2
NOS Total	30	63	-	7

National Occupational Standards (NOS) Parameters

NOS Code	PSC/N0140
NOS Name	Maintain Plumbing Tools and Equipment
Sector	Plumbing
Sub-Sector	Industrial / Non-Industrial Plumbing
Occupation	Plumbing Systems Installation and Maintenance
NSQF Level	3
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

SGJ/N1702: Optimize resource utilization at workplace

Description

This unit is about adopting sustainable practices and optimizing use of resources, especially material, energy and waste, in day-to-day operations at work

Scope

The scope covers the following :

- Material conservation practices
- Energy/electricity conservation practices
- Effective waste management/recycling practices

Elements and Performance Criteria

Material conservation practices

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

- PC1. identify ways to optimize usage of material including water in various tasks/activities/processes
- PC2. check for spills/leakages in various tasks/activities/processes
- PC3. plug spills/leakages and escalate to appropriate authority if unable to rectify
- PC4. carry out routine cleaning of tools, machines and equipment

Energy/electricity conservation practices

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

- PC5. identify ways to optimize usage of electricity/energy in various tasks/activities/processes
- PC6. check if the equipment/machine is functioning normally before commencing work and rectify wherever required
- PC7. report malfunctioning (fumes/sparks/emission/vibration/noise) and lapse in maintenance of equipment
- PC8. ensure electrical equipment and appliances are properly connected and turned off when not in use

Effective waste management/recycling practices

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

- PC9. identify recyclable and non-recyclable, and hazardous waste generated
- PC10. segregate waste into different categories
- PC11. dispose non-recyclable waste appropriately
- PC12. deposit recyclable and reusable material at identified location
- PC13. follow processes specified for disposal of hazardous waste

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1. potential hazards, risks and threats based on the nature of work
- KU2. layout of the workstation and electrical and thermal equipment used

- KU3. organizations procedures for minimizing waste
- KU4. efficient and inefficient utilization of material and water
- KU5. ways of efficiently managing material and water in the process
- KU6. basics of electricity and prevalent energy efficient devices
- KU7. ways to recognize common electrical problems
- KU8. common practices of conserving electricity
- KU9. usage of different colours of dustbins
- KU10. categorization of waste into dry, wet, recyclable, non-recyclable and items of single-use plastics
- KU11. waste management and methods of waste disposal
- KU12. common sources of pollution and ways to minimize it

Generic Skills (GS)

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

- GS1. record data on waste disposal at workplace
- GS2. complete statutory documents relevant to safety and hygiene
- GS3. read Standard Operating Practices (SOP) documents
- GS4. communicate with colleagues on the significance of greening of jobs
- GS5. make timely decisions for efficient utilization of resources
- GS6. complete tasks efficiently and accurately within stipulated time
- GS7. work with supervisors/team members to carry out work related tasks
- GS8. identify cause and effect of greening of jobs

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Material conservation practices</i>	4	8	-	-
PC1. identify ways to optimize usage of material including water in various tasks/activities/processes	1	2	-	-
PC2. check for spills/leakages in various tasks/activities/processes	1	2	-	-
PC3. plug spills/leakages and escalate to appropriate authority if unable to rectify	1	2	-	-
PC4. carry out routine cleaning of tools, machines and equipment	1	2	-	-
<i>Energy/electricity conservation practices</i>	4	8	-	-
PC5. identify ways to optimize usage of electricity/energy in various tasks/activities/processes	1	2	-	-
PC6. check if the equipment/machine is functioning normally before commencing work and rectify wherever required	1	2	-	-
PC7. report malfunctioning (fumes/sparks/emission/vibration/noise) and lapse in maintenance of equipment	1	2	-	-
PC8. ensure electrical equipment and appliances are properly connected and turned off when not in use	1	2	-	-
<i>Effective waste management/recycling practices</i>	5	10	-	-
PC9. identify recyclable and non-recyclable, and hazardous waste generated	1	2	-	-
PC10. segregate waste into different categories	1	2	-	-
PC11. dispose non-recyclable waste appropriately	1	2	-	-
PC12. deposit recyclable and reusable material at identified location	1	2	-	-
PC13. follow processes specified for disposal of hazardous waste	1	2	-	-
NOS Total	13	26	-	-

National Occupational Standards (NOS) Parameters

NOS Code	SGJ/N1702
NOS Name	Optimize resource utilization at workplace
Sector	Green Jobs
Sub-Sector	Other Green Jobs
Occupation	Resource Optimization
NSQF Level	3
Credits	TBD
Version	1.0
Last Reviewed Date	28/04/2022
Next Review Date	28/04/2025
NSQC Clearance Date	28/04/2022

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/N0139.Carry out Support Activities for Plumbing Work	30	60	-	10	100	40
PSC/N0140.Maintain Plumbing Tools and Equipment	30	63	-	7	100	30
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
SGJ/N1702.Optimize resource utilization at workplace	13	26	-	-	39	10
Total	133	275	-	31	439	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.