

PIPE FITTER



COMPETENCY STANDARDS

National Vocational Certificate Level 2- 4

Version 1 - November, 2019

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1. Introduction

Pipefitters are in demand across the country and abroad. Pipefitters install, maintain and repair pipe systems that carry water, chemicals, acids, processed food liquids and gases. These pipes are used mostly in domestic, manufacturing, commercial, and industrial settings. This is a good career opportunity for a reliable and responsible individual with a strong work ethic. Pipefitters install, maintain and repair pipe systems in power plants, industrial facilities as well as heating and cooling systems in large office buildings and in domestic apartments and houses.

In order to build the capacity of technical and vocational training institutes in Pakistan through provision of demand driven and market-oriented competencies-based trainings in the light engineering sector the NAVTTC, and TEVT Sector Support Program (TSSP) have joined hands together to develop qualifications for the light engineering sector. These qualifications will not only build the capacity of existing workers of this sector but also support the youth to acquire skills best fit for this sector. The benefits and impact of development of these qualifications will be on both demand and supply side.

Based upon this demand of industry these competency-based qualifications for Pipefitters are developed under National Vocational Qualification Framework (NVQF) (Level 2 to 4). The qualifications mainly cover competencies along with related knowledge and professional skills which are essential for getting a job or self-employed.

The National Vocational & Technical Training Commission (NAVTTC) has approved the Qualification Development Committee (QDC). The QDC consists of experts from the relevant industries from different geographical locations across Pakistan and academicians including TVET instructors and practitioners. The National Competency Standards could be used as a referral document for the development of curricula to be used by training institutions.

Pipefitter curriculum will prepare students to install pipes and fittings that carry water, steam, air, or other liquids or gases. They determine the necessary materials for a job, connect pipes, and perform pressure tests to ensure that a pipe system is airtight and watertight in a safe, effective manner. Graduates from this program may find jobs in factories, homes, businesses, and other places where there are pipes or septic systems.



2. Detail of National Vocational Certificate Levels

The detail of the competency standards included in this qualification are given below:

National Vocational Certificate level 2, in (Light Engineering Sector) “Pipefitter”

- **Comply Personal Health and Safety Guidelines**
- **Communicate the Workplace Policy and Procedure**
- **Perform Basic Communication (Specific)**
- **Perform Basic Computer Application (Specific)**
 - Fabricate Piping System
 - Join Pipes
 - Install Pipeline Support System
 - Install Pipelines
 - Install Drainage System

• **National Vocational Certificate level 3, in (Light Engineering Sector) “Pipefitter”**

- Apply Work Health and Safety Practices (WHS)
- Identify and Implement Workplace Policy and Procedures
- Communicate at Workplace
- Perform Computer Application Skills
- Manage Personal Finances
- Install Pumps
- Install Pipe Fixtures
- Test Piping system
- Maintain Pipelines

• **National Vocational Certificate level 4, in (Light Engineering Sector) “Pipefitter”**

- Contribute to Work Related Health and Safety (WHS) Initiatives
- Analyze Workplace Policy and Procedures
- Perform Advanced Communication
- Develop Advance Computer Application Skills
- Manage Human Resource Services
- Develop Entrepreneurial skills
- Install Steam Fittings
- Install Process Piping System



3. Purpose of the Qualification

The purpose of the training is to provide skilled manpower to improve the existing capacity of the light engineering sector. This training will provide the requisite skills to the trainees to become Pipefitters. It will enable the participants to meet the challenges in the field of light engineering industry. Further, to improve the skill level of the Pipefitters and prepare them for the light engineering industry to meet the market competition nationally and internationally.

The core purpose of this qualification is to produce employable Pipefitters who could perform pipefitting operations according to national and international standards. In addition, this qualification will prepare unemployable youth to be employed in the light engineering sector.

4. Main Objectives of the Qualification

The Pipefitter qualifications level 2 - 4 consists of theoretical and practical details required to operate heavy machines in light engineering industries. The main objectives of the qualification are as follows:

1. Comply Personal Health and Safety Guidelines
2. Communicate the Workplace Policy and Procedure
3. Perform Basic Communication (General)
4. Perform Basic Computer Application (General)
5. Fabricate Piping System
6. Join Pipes
7. Install Pipeline Support System
8. Install Pipelines
9. Install Drainage System
10. Apply Work Health and Safety Practices (WHS)
11. Identify and Implement Workplace Policy and Procedures
12. Communicate at Workplace
13. Perform Computer Application Skills
14. Manage Personal Finances
15. Install Pumps
16. Install Pipe Fixtures
17. Test Piping system
18. Maintain Pipelines
19. Contribute to Work Related Health and Safety (WHS) Initiatives



- 20. Analyze Workplace Policy and Procedures
- 21. Perform Advanced Communication
- 22. Develop Advance Computer Application Skills
- 23. Manage Human Resource Services
- 24. Develop Entrepreneurial skills
- 25. Install Steam Fittings
- 26. Install Process Piping System



5. Date of Validation

The level 2-4 of National vocational qualification on Pipefitter has been validated by the Qualifications Development Committee (QDC) members on March 09 - 10, 2019 and will remain in force until December 2021.

6. Codes of Qualifications

The International Standard Classification of Education (ISCED) is a framework for assembling, compiling and analyzing cross-nationally comparable statistics on education and training. ISCED codes for these qualifications are assigned as follows:

ISCED Classification for Pipefitter level 2- 4	
Code	Description
0732BCE09	National Vocational Certificate level 2, in (Light Engineering Sector) "Pipefitter"
0732BCE10	National Vocational Certificate level 3, in (Light Engineering Sector) "Pipefitter"
0732BCE11	National Vocational Certificate level 4, in (Light Engineering Sector) "Pipefitter"



7. Members of Qualification Development Committee

The following members participated in the Qualification development and validation process.

S#	Name	Designation	Organization	Role in QDC
1	Mr. Zahid Nisar	CEO/ Project Engineer	Combine Construction	Chairman QDC
2	Mr. M. Sajid Khan	HOD- Mechanical	Pak Swedish (STEVTA)	CS+Validation
3	Mr. Naveed Ahmed	Plumber	Self-employed	QDC+OP+CS+Validation
4	Mr. Iftikhar Mehmood	Site Engineer	Shaan Associates	QDC+OP+CS+Validation
5	Mr. Shahab Raees	Plumber/ Site Supervisor	Paragon Construction	QDC+OP
6	Mr. Jawed Akhter	Plumber/ Driller	Water Well	QDC
7	Mr. Muhammad Sabir	Plumber/ Driller	Water Well	QDC
8	Mr. Mian Akbar Zada	Senior Driller	Adnan Drilling	QDC
9	Mr. Shakil Ahmed	In charge Curriculum	STTB	CS Validation
10	Mr. Liaqat Ali Jamro	Director, A&T	STEVTA	QDC+OP+CS+Validation
11	Mr. Ali Shabbar	Deputy Project Manager	Bahria Icon Tower	CS+Validation
12	Ms. Sarwat Sabih	Civil Engineer	Freelance Engineer	QDC+OP+CS+Validation
13	Mr. Anis Khan	Principal	Memon Industrial & Technical Training Institute (MITTI)	QDC+OP+CS+Validation
14	Mr. Syed Ali Tirmizi	CEO	Well Drilling Institute	QDC+OP
15	Mr. Shafqat Rafiq	Certified CBTA Assessor/ Deputy Manager, QA	Orient Automotive	QDC+OP+CS+Validation
16	Mr. Aftab Gilani	Project Head	NA Group	CS Validation
17	Mr. Rehan Naseem	Sr. Instructor	Hunar Foundation	CS Validation
18	Mr. Waseem Haider	Staff Trainer	STI, Quetta	QDC+OP+CS+Validation
19	Mr. Naeem Ahmed	DACUM Facilitator	TTB	OP Facilitator
20	Mr. Hammad Mateen	Program Head	TAF Foundation	CS Facilitator
21	Muhammad Ishaq	Deputy Director	NAVTC	QDC+OP



8. Entry Requirements

The entry for National Vocational Certificate level 2-4, in (Light Engineering Sector) “Pipefitter” are given below:

Title	Entry Requirements
National Vocational Certificate level 2, in (Light Engineering Sector) “Pipefitter”	Entry for assessment for this qualification is open. However, entry into formal training institutes, based on this qualification may require skills and knowledge equivalent to National Vocational Certificate Level 1
National Vocational Certificate level 3, in (Light Engineering Sector) “Pipefitter”	Entry for assessment for this qualification is open. However, entry into formal training institute for this qualification is person having National Vocational Certificate level 2, in (Light Engineering Sector) “Pipefitter”.
National Vocational Certificate level 4, in (Light Engineering Sector) “Pipefitter”	Entry for assessment for this qualification is open. However, entry into formal training institute for this qualification is person having National Vocational Certificate level 3, in (Light Engineering Sector) “Pipefitter”.



9. Categorization and Levelling of the Competency Standards

Code	Name of Duty or (Module)	Level	Credit	Category
102200844	Comply Personal Health and Safety Guidelines	2	03	Generic
041700839	Communicate the Workplace Policy and Procedure	2	02	Generic
001100851	Perform Basic Communication (Specific)	2	03	Generic
061100856	Perform Basic Computer Application (Specific)	2	04	Generic
073200736	Fabricate Piping System	2	10	Technical
073200737	Join Pipes	2	10	Technical
073200738	Install Pipeline Support System	2	5	Technical
073200739	Install Pipelines	2	12	Technical
073200740	Install Drainage System	2	09	Technical
102200846	Apply Work Health and Safety Practices (WHS)	3	03	Generic
041700840	Identify and Implement Workplace Policy and Procedures	3	02	Generic
001100852	Communicate at Workplace	3	03	Generic
061100858	Perform Computer Application Skills	3	04	Generic
041300867	Manage Personal Finances	3	03	Generic
073200741	Install Pumps	3	18	Technical
073200742	Install Pipe Fixtures	3	15	Technical
073200743	Test Piping System	3	10	Technical
073200744	Maintain Pipelines	3	10	Technical
102200848	Contribute to Work Related Health and Safety (WHS) Initiatives	4	03	Generic
041700841	Analyze Workplace Policy and Procedures	4	03	Generic
001100853	Perform Advanced Communication	4	03	Generic
061100858	Develop Advance Computer Application Skills	4	04	Generic
041300869	Manage Human Resource Services	4	02	Generic
041300860	Develop Entrepreneurial skills	4	03	Generic
073200745	Install Steam Fittings	4	15	Technical
073200746	Install Process Piping System	4	12	Technical



10. Packaging of Qualifications

The National Vocational Qualifications have been packaged as detailed below:

"Pipefitter" National Vocational Certificate level 4, in Light Engineering Sector	Install Process Piping System
	Install Steam Fittings
	Develop Entrepreneurial skills
	Manage Human Resource Services
	Develop Advance Computer Application Skills
	Perform Advanced Communication
	Analyze Workplace Policy and Procedures
"Pipefitter" National Vocational Certificate level 3, in Light Engineering Sector	Contribute to Work Related Health and Safety (WHS) Initiatives
	Maintain Pipelines
	Test Piping System
	Install Pipe Fixtures
	Install Pumps
	Manage Personal Finances
	Perform Computer Application Skills
	Communicate at Workplace
	Identify and Implement Workplace Policy and Procedures
	Apply Work Health and Safety Practices (WHS)
"Pipefitter" National Vocational Certificate level 2, in Light Engineering Sector	Install Drainage System
	Install Pipelines



	Install Pipeline Support System
	Join Pipes
	Fabricate Piping System
	Perform Basic Computer Application (Specific)
	Perform Basic Communication (Specific)
	Communicate the Workplace Policy and Procedure
	Comply Personal Health and Safety Guidelines



Detail of Competency Standards

102200844 Comply Personal Health and Safety Guidelines

Overview: This Competency Standard identifies the competencies required to protect/apply occupational Safety, health and Environment at workplace according to the industry's approved guidelines, procedures and interpret environmental rules/regulations. Trainee will be expected to identify and use Personal Protective Equipment (PPE) according to the work place requirements. The underpinning knowledge regarding Observe Occupational Safety and Health (OSH) will be sufficient to provide the basis for the job at workplace.

Competency Units	Performance Criteria
CU1. Identify Personal Hazards at Workplace	P1: Identify risk to personal health P2: Identify hygiene and safety at work place P3: Identify processes P4: Identify tools, equipment and consumable materials that have the potential to cause harm P5: Report, identified risk to Health, hygiene and safety to concerned
CU2. Apply Personal Protective and Safety Equipment (PPE)	P1: List the Personal Protective equipment P2: Select personal protective equipment in terms of type and quantity according to work orders. P3: Wear personal protective equipment according to job requirements. P4: Clean personal protective equipment P5: Stored Personal Protective equipments in proper place after use.
CU3. Comply Occupational Safety and Health (OSH)	P1: Maintain cleanliness and hygiene as per organizational policy P2: Comply with Health, hygiene and safety precautions before starting work P3: Comply organizational Health, hygiene and safety guidelines during work P4: Deal with resolvable problems according to prescribed procedures P5: Report un resolvable problems to concerned P6: Place the tools equipment etc at their prescribed place after completion of work



CU4. Dispose of hazardous Waste/materials from the designated area.	P1: Identify hazardous waste materials which needs to be disposed off P2: Segregate hazardous or non-hazardous waste carefully from the designated area as per approved procedure P3: Use proper disposal hazardous containers for dispose-off hazardous waste as per procedure P4: Take necessary precautions like putting masks and gloves while disposing hazardous waste/ materials as per standard operating procedure
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Knowledge and Understanding

The candidate must be able to demonstrate underpinning knowledge and understanding required to carry out tasks covered in this competency standard. This includes the knowledge of:

- K1:** Explain safety rules and regulations of organization
- K2:** List Personal protection and safety Equipment
- K3:** Describe meaning of Safety signs and symbols
- K4:** Demonstrate understanding of safety related Standard Operating Procedure/guidelines
- K5:** Describe waste disposal SOPs
- K6:** Explain best practices relating to clean and safe work environment

Critical Evidence(s) Required

The candidate needs to produce following critical evidence (s) to be competent in this competency standard:

A person who demonstrates competency in this unit must be able to provide evidence of maintaining personal health and hygiene practices. The evidence should integrate employability skills with workplace tasks and job roles and verify competency is able to be transferred to other circumstances and environments.



041700839 Communicate the Workplace Policy and Procedure

Overview: This unit describes the performance outcomes, skills and knowledge required to develop communication skills in the workplace. It covers gathering, conveying and receiving information, along with completing assigned written information under direct supervision.

Competency Units	Performance Criteria
CU1. Identify workplace communication procedures	P1. Identify organizational communication requirements and workplace procedures with assistance from relevant authority P2. Identify appropriate lines of communication with supervisors and colleagues. P3. Seek advice on the communication method/equipment most appropriate for the task
CU2. Communicate at workplace	P1. Use effective questioning, and active listening and speaking skills to gather and convey information P2. Use appropriate non-verbal behavior at all times P3. Encourage, acknowledge and act upon constructive feedback
CU3. Draft Written Information	P1. Identify and comply with required range of written materials in accordance with organizational policy and procedures P2. Draft and present assigned written information for approval, ensuring it is written clearly, concisely and within designated timeframes. P3. Ensure written information meets required standards of style, format and detail. P4. Seek assistance and/or feedback to aid communication skills development
CU4. Review Documents	P1. Check draft for suitability of tone for audience, purpose, format and communication style P2. Check draft for readability, grammar, spelling, sentence and paragraph construction and correct any inaccuracies or gaps in content. P3. Check draft for sequencing and structure P4. Check draft to ensure it meets organizational requirements



	P5. Ensure draft is proofread, where appropriate, by supervisor or colleague
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Knowledge and Understanding

- K1:** Key provisions of relevant regulations that may affect aspects of business operations, such as privacy laws
- K2:** Organizational policies, plans and procedures.
- K3:** Barriers to communication
- K4:** Communication model
- K5:** Verbal and written communication techniques

Critical Evidence(s) Required

A person who demonstrates competency in this unit must be able to provide evidence of the ability to develop communication skills in the workplace. It covers gathering, conveying and receiving information, along with completing assigned written information under direct supervision. The evidence should integrate employability skills with workplace tasks and job roles and verify competency is able to be transferred to other circumstances and environments.



001100851 Perform Basic Communication (Specific)

Overview: This unit describes the skills and knowledge required to assist in the development of communication competence by providing information regarding different forms of communication and their appropriate use.

By the end of this program, learners will be able, to communicate more effectively and efficiently by: working in a team, follow supervisor's instructions and develop generic communication work skills at workplace

Competency Units	Performance Criteria
CU1. Communicate in a team to achieve intended outcomes	P1. Treat team members with respect P2. Maintain positive relationships to achieve common organizational goals P3. Get work related information from team P4. Identify interrelated work activities to avoid confusion P5. Adopt communication skills, which are designed in a team. P6. Identify problems in communication with a team P7. Resolve Communication barrier through discussion and mutual agreement
CU2. Follow Supervisor's instructions as per organizational SOPs	P1. Receive the instructions from Supervisor P2. Carry out the instructions of the supervisor P3. Report to the supervisor as per organizational SOPs
CU3. Develop Generic communication skills at workplace	P1. Develop basic reading skills P2. Develop Basic writing Skills P3. Develop basic listening skills

Knowledge and Understanding

The candidate must be able to demonstrate underpinning knowledge and understanding required to carry out the tasks covered in this competency standard. This includes the knowledge of:

- K1:** Basic Learn and understand Types of communication
- K2:** Basic Reading Skills
- K3:** Basic Writing skills
- K4:** Basic Verbal communication skills
- K5:** Basic Problem solving skills



- K6:** Basic Self-Management Skills
- K7:** Basic Technology Skills
- K8:** Basic Interview Skills
- K9:** Basic Workplace dress code
- K10:** Basic The role of team members and functionality of the teams

Critical Evidence(s) Required

The candidate needs to produce following critical evidence(s) in order to be competent in this competency standard:

- Make a list of appropriate communication skills with colleagues and supervisors



061100856 Perform Basic Computer Application (Specific)

Overview: This unit describes the skills and knowledge required to use spreadsheet to prepare a page of document, develops familiarity with Word, Excel, Access, PowerPoint, email, and computer graphics basics.

It applies to individuals who perform a range of routine tasks in the workplace using a fundamental knowledge of spreadsheets, Microsoft office and computer graphics in under direct supervision or with limited responsibility.

Competency Units	Performance Criteria
CU1. Create Word Documents	P1. Open word processing application P2. Create a word document P3. Customize page layout with relevant name setting P4. Set up page in a word document P5. Edit word document as required P6. Use simple formatting tools when creating the document P7. Save word document to directory P8. Insert table in a word document P9. Insert appropriate images into document as necessary P10. Insert header/footer in a word document P11. Insert section break in a word document P12. Set style in word document P13. Select basic Print settings P14. Print the document
CU2. Use internet for Browsing	P1. Use search engines to open website P2. Search data on different topics P3. Refine search to increase relevance of information or content P4. Navigate a website to access the information or content required



Knowledge and Understanding

The candidate must be able to demonstrate underpinning knowledge and understanding required to carry out the tasks covered in this competency standard. This includes the knowledge of:

- K1:** Describing formatting styles and their effect on formatting, readability and appearance of documents
- K2:** Outline purpose, use and function of word-processing software.
- K3:** Editing in MS Word
- K4:** Formatting in MS word
- K5:** Use of different search engines
- K6:** Use of different web pages

Critical Evidence(s) Required

The candidate needs to produce following critical evidence(s) in order to be competent in this competency standard:

- Identify the components of computer
- Follow organizational ergonomic work health and safety (WHS) requirements and practices
- Create, open and retrieve documents using customized basic settings
- Format documents by creating tables and adding text, objects and images
- Save and prints documents.
- Download data through web browser



Fabricate Piping System

Overview: This competency standard covers the skills and knowledge required to interpret drawings/ layouts, prepare work area & perform different operations to fabricate a piping system.

Competency Unit	Performance Criteria
CU1. Interpret drawings/ layouts	P1. Interpret symbols from the given drawing/ layout P2. Read scale of the given drawing/ layout P3. Interpret different types of abbreviations from the given drawing/ layout P4. Take measurements from the given drawing/ layout P5. Estimate material from the given job specification/ drawing/ layout P6. Interpret different section views/ coordinated sections from the given drawing/ layout P7. Interpret revisions in drawings/ layouts
CU2. Prepare work area	P1. Inspect work area, check on potential hazards P2. Arrange material according to the given drawing/ specifications P3. Arrange the required tools/ equipment to perform fabrication of piping system P4. Ensure electrical & water supply to the work area P5. Disconnect/ remove previously existing services from the work area according the given drawing/ layout P6. Coordinate with coworkers according to the job
CU3. Cut pipes	P1. Perform measurement of pipe according to the drawing/ job specification P2. Mark the job piece according to the drawing/ job specification P3. Select appropriate tools/ equipment according to the given material P4. Cut the pipe as per job requirement and according to safety rules P5. Remove burr by using pipe reamer.
CU4. Bend pipe	P1. Perform measurement of pipe according to the given drawing/ job specification P2. Mark the workpiece according the given drawing/ job specification P3. Select appropriate tools/ equipment to bend the given pipe. P4. Bend pipes by using pipe bender/sand according to the given job



CU5. Perform threading on pipes	P1. Perform measurement of pipe according to the given drawing/ job specification P2. Mark the workpiece according the given drawing/ job specification P3. Select appropriate tools/ equipment to tread the given pipe. P4. Perform threading of pipes using pipe threading die as per standard
CU6. Perform Coating / Insulation on pipe	P1. Perform primer on given pipe according to specification/ standards P2. Select color code for coating according to standards P3. Apply color coating according to standards P4. Insulate the pipe as per job specifications

Knowledge & Understanding

The candidate must possess underpinning knowledge and understanding required to carry out tasks covered in this competency standard. Therefore he/she must be able to:

- Describe types of drawings/specifications and their applications
- State importance of drawing
- Explain symbols relating to drawing and their applications
- Define line diagram of pipe line
- Describe Abbreviations and scale of drawing
- Interpret & extract information from drawing & specifications
- Define the importance of preparation of work area before starting of work
- Explain the identification of different types of pipe
- Describe the safety features to check the working area
- Knowledge and identification of work-related tools/equipment
- Purpose of measuring & checking tools
- Explain the accuracy of measurement
- Describe the necessity of marking
- Explain methods to cut different types of pipe
- Enlist methods of pipe bending
- Explain types of thread in pipe
- Explain making of grooves in pipe
- State use of threading dies & other threading instruments
- Define necessary points to consider during threading process
- Describe the importance and purpose of color coating/insulation
- Explain types of coating/insulation
- Identify the coatings and their application
- Describe cleaning procedure of work area
- Describe all necessary environmental precautions and protective measures
- Understand method of statement



Critical Evidence(s) Required

The candidate needs to produce following critical evidence(s) in order to be competent in this competency standard:

- Interpret drawing
- Perform cutting of pipe
- Perform bending of pipe
- Perform threading of pipe

Tools and Equipment

The tools and equipment required for this competency standard are given below:

S. No.	Items
1.	Leather Gloves
2.	Cotton Gloves
3.	Goggles
4.	Safety mask
5.	Helmet
6.	Safety belt
7.	Safety Shoes
8.	Ear plug / Ear Muff
9.	Overall
10.	Measuring Tape/ Folding Ruler
11.	Combination Pliers
12.	Vernier Caliper
13.	Inside/Outside Caliper
14.	Pointing chisel
15.	Cold Chisel
16.	Ball Peen Hammer
17.	Straight Peen Hammer 2 lbs.
18.	Club Hammer
19.	Pipe Wrench 12" to 36"
20.	Pipe Vise 6" with tripod
21.	Ratchet die set ½" to 2"
22.	Ratchet die set ½" to 1 ¼ "
23.	Hand Hack Saw
24.	Power Disc grinder 14"
25.	File Set
26.	Pipe Reamer Set
27.	Adjustable Wrench 8" to 12"
28.	Phillips Screw Driver Set
29.	Flat Screw Driver Set
30.	Allen Key Set
31.	Tin Snip Cutter



32.	Pipe Cutter ½" to 2"
33.	Open End Spanner Set (Metric)
34.	Open End Spanner Set (Imperial)
35.	Offset Ring Spanner Set (Metric)
36.	Offset Ring Spanner Set (Imperial)
37.	Combination Spanner Set (Metric)
38.	Combination Spanner Set (Imperial)
39.	Hammer Drill Machine (Hilti)
40.	Hand Drill Machine
41.	Twist Drill Set
42.	Masonry Drill Set
43.	Hydraulic Pipe Bender
44.	Heat Gun
45.	Fusion Machine (PPRC set 20 mm to 160 mm)
46.	Gas Cutter Set with Torch, Pipe and Cylinders
47.	Magnet Spirit Level
48.	Water Level Pipe 12 meter
49.	Soldering Iron
50.	Flaring Tool Set
51.	Swaging Tool Set
52.	Tube Cutter
53.	Bench Vise 6"
54.	Tri Square 12", 24"
55.	Plumb bob with Mason Line
56.	Disc 14" Power Cutter
57.	Centre punch
58.	Chiseler (Jack Hammer Machine)
59.	Chalk Liner
60.	Testing Plugs 2" to 4" expendable
61.	Baby Grinder 4"
62.	Pipe Groover
63.	Oil can
64.	Portable scrap metal box + cleaning set



Join Pipes

Overview: This competency standard covers the skills and knowledge required to perform different joining processes related to pipes. These include, grinding, making flanged joints, solvent joints, brazing, soldering and joining pipes through electric arc welding.

Competency Unit	Performance Criteria
CU1. Make flanged joint	P1. Arrange tools/ equipment/ material as per job requirement P2. Select & use appropriate PPEs P3. Install flanges according to standard procedure P4. Check alignment according to standard procedure P5. Fix gasket according to standard procedure P6. Tighten fasteners according to standard procedure
CU2. Make solvent joint	P1. Arrange tools/ equipment/ material as per job requirement P2. Select & use appropriate PPEs P3. Measure pipe as per given task/ job specification P4. Mark the pipe as per given task/ job specification P5. Cut the pipe squarely as per given task/ job specification P6. Clean the surface of pipe & fitting P7. Apply solvent on pipe and fitting as per job requirement P8. Insert pipe into fitting as per job requirement P9. Cure the joint as per standard
CU3. Perform pipe grinding	P1. Arrange tools/ equipment/ material as per job requirement P2. Ensure safety precautions P3. Measure pipe as per job requirement P4. Mark pipe as per job requirement P5. Cut pipe as per job requirement P6. Make bevel on pipe edge by using angle grinder P7. Check degree of bevel by bevel protector
CU4. Braze pipe	P1. Arrange tools/ equipment/ material as per job requirement P2. Ensure safety precautions P3. Measure pipe as per job requirement P4. Mark pipe as per job requirement P5. Cut pipe as per job requirement P6. Perform brazing according to standard



	P7. Clean brazing area by emery paper
CU5. Perform soldering on pipe	P1. Arrange tools/ equipment/ material as per job requirement P2. Ensure safety precautions P3. Measure pipe as per job requirement P4. Mark pipe as per job requirement P5. Cut pipe as per job requirement P6. Perform soldering according to standard P7. Clean soldering area by emery paper
CU6. Make fusion joint	P1. Arrange tools/ equipment/ material as per job requirement P2. Ensure safety precautions P3. Measure pipe as per job requirement P4. Mark pipe as per job requirement P5. Cut pipe as per job requirement P6. Adjust fusion machine temperature as per manufacturer's recommendation P7. Heat the machine to designated temperature P8. Adjust pipe and fitting on fusion machine P9. Apply proper force and hold as per manufacturer's recommendation P10. Pull out pipe then fix and join together firmly P11. Align and hold as per recommendation
CU7. Make welded joint through arc welding	P1. Arrange tools/ equipment/ material as per job requirement P2. Ensure safety precautions & use PPE P3. Measure pipe as per job requirement P4. Mark pipe as per job requirement P5. Cut pipe as per job requirement P6. Ensure bevel on pipe edges as per standard P7. Align both pipes as per standard P8. Adjust electric current for welding plant P9. Ensure level of both pipes and keep distance as per required standard P10. Perform welding



Knowledge & Understanding

The candidate must possess underpinning knowledge and understanding required to carry out tasks covered in this competency standard. Therefore he/she must be able to:

- Describe types of pipe joints
- Explain the purpose and necessity of pipe joints' application according to the material
- State joining methods of pipe
- Identification of different pipe joints
- Define different flanges
- Explain procedure to make flange joint
- State difference of material used for solvent joint
- Explain procedure to make solvent joint
- Explain procedure to make rubber ring/ push-fit joint
- State use of angle grinder & bevel protector
- Explain procedure to perform grinding of pipe
- State brazing standard
- State different types of soldering
- Explain difference between soldering and brazing
- Explain procedure to make brazing/soldering joint
- State fusion process
- Explain difference between fusion and brazing
- Explain procedure to make fusion joint
- State types of welding
- State importance of arc welding
- Explain procedure to make welded joint by arc welding
- Describe special precautions to be taken during different jointing system
- Understanding of flange PCD (Pitch Centre Diameter)

Critical Evidence(s) Required

The candidate needs to produce following critical evidence(s) in order to be competent in this competency standard:

- Make flange joint (welded/ threaded)
- Make solvent joint
- Perform soldering of pipe
- Make fusion joint



Tools and Equipment

The tools and equipment required for this competency standard are given below:

S. No.	Items
1.	Leather Gloves
2.	Cotton Gloves
3.	Goggles
4.	Safety mask
5.	Helmet
6.	Safety belt
7.	Safety Shoes
8.	Ear plug / Ear Muff
9.	Overall
10.	Face Shield and Holder with cable
11.	Face Shield (Transparent)
12.	Welding Gloves
13.	Measuring Tape
14.	Combination Pliers
15.	Vernier Caliper
16.	Inside/Outside Caliper
17.	Pointing chisel
18.	Cold Chisel
19.	Ball Peen Hammer
20.	Straight Peen Hammer 2 lbs.
21.	Club Hammer
22.	Pipe Wrench 12" to 24"
23.	Pipe Vise 6" with tripod
24.	Ratchet die set ½" to 2"
25.	Hand Hack Saw
26.	Power Disc grinder 14"
27.	Portable Welding Machine 3 Phase 300 Amp.
28.	File Set
29.	Pipe Reamer Set
30.	Adjustable Wrench 8" to 12"
31.	Phillips Screw Driver Set
32.	Flat Screw Driver Set
33.	Allen Key Set
34.	Tin Snip Cutter
35.	Pipe Cutter ½" to 2"
36.	Open End Spanner Set (Metric)
37.	Open End Spanner Set (Imperial)
38.	Offset Ring Spanner Set (Metric)
39.	Offset Ring Spanner Set (Imperial)
40.	Combination Spanner Set (Metric)



41.	Combination Spanner Set (Imperial)
42.	Hand Drill Machine
43.	Twist Drill Set
44.	Masonry Drill Set
45.	Heat Gun
46.	Fusion Machine (PPRC set 20mm to 63mm)
47.	Gas Cutter Set with Torch, Pipe and Cylinders
48.	Magnet Sprit Level
49.	Water Level 12 meter
50.	Soldering Machine
51.	Flaring Tool Set
52.	Swaging Tool Set
53.	Tube Cutter
54.	Bench Vise 6"
55.	Tri Square 12", 24"
56.	Disc 14" Power Cutter
57.	Chalk Liner
58.	Testing Plugs 2" to 4" expendable
59.	Baby Grinder 4"
60.	Grip Pliers
61.	Laser Level
62.	Fusion Machine (PE Pipe Set) Butt Fusion



Pipeline Support System

Overview: This competency standard covers the skills and knowledge required to install support system for a pipeline. These include, anchoring & basic masonry works.

Competency Unit	Performance Criteria
CU1. Prepare for anchoring	P1. Ensure safety precautions & use PPE P2. Arrange material/ tools/ equipment according to the job specification P3. Interpret/ confirm layout according to the given drawing P4. Perform measurement as per given drawing P5. Mark the workpiece as per given drawing P6. Drill holes
CU2. Perform anchoring	P1. Fix drop-in anchors as per standard P2. Fix the support as per requirement P3. Ensure level and load-bearing capacity of support system is according to the given drawing
CU3. Perform masonry works	P1. Select & use appropriate PPE P2. Arrange tools/ material as per the given job P3. Layout the work area as per the given drawing P4. Mark the area for excavation as per the given drawing P5. Excavate according to the given job requirement P6. Mix sand and cement mortar as per the standard ratio P7. Cordon off the work area P8. Perform basic masonry work as per the required job P9. Ensure housekeeping at all times during the job

Knowledge & Understanding

The candidate must possess underpinning knowledge and understanding required to carry out tasks covered in this competency standard. Therefore he/she must be able to:

- Explain support/ anchoring system
- Define different types of support/ anchoring system
- Explain importance of position & alignment & load-bearing capacity of support/anchoring system
- State procedure of fixing of anchoring system
- Identification and marking of excavation area
- List tools and equipment required for excavation
- Explain application of safe procedure before and after excavation
- State basic masonry materials and their usage with different ratios



Critical Evidence(s) Required

The candidate needs to produce following critical evidence(s) in order to be competent in this competency standard:

- Fix drop-in anchors as per standard
- Fix the support
- Ensure level and load-bearing capacity of support system

Tools and Equipment

The tools and equipment required for this competency standard are given below:

S. No.	Items
1.	Cotton Gloves
2.	Goggles
3.	Safety mask
4.	Helmet/ Face shield
5.	Safety belt
6.	Safety Shoes
7.	Ear plug / Ear Muff
8.	Overall
9.	Measuring Tape
10.	Combination Pliers
11.	Cold Chisel
12.	Straight Peen Hammer 2 lbs.
13.	Hand Hack Saw
14.	Adjustable Wrench 8" to 12"
15.	Phillips Screw Driver Set
16.	Flat Screw Driver Set
17.	Open End Spanner Set
18.	Hammer Drill Machine (Hilti)
19.	Hand Drill Machine
20.	Masonry Drill Set
21.	Magnet Sprit Level
22.	Plumb bob with Mason Line
23.	Disc 14" Power Cutter
24.	Shovel
25.	Pick axe for digging
26.	Wheel barrow
27.	Chiseler (Jack Hammer Machine)
28.	Mortar Pan
29.	Baby Grinder 4"
30.	Laser Level
31.	Trowel
32.	Cleaning Set



Install Pipeline System

Overview: This competency standard covers the skills and knowledge required to install a pipeline system. This also includes the knowledge and understanding of different types of valves and their applications.

Competency Unit	Performance Criteria
CU1. Install pipeline	P1. Arrange approved drawing for given task P2. Adopt necessary PPEs according to the task P3. Select tools/equipment/ material as per given task P4. Figure out the placement of pipes (hot & cold) as per drawing P5. Locate and mark anchor/ support points as per requirement P6. Remeasure to ensure the marking P7. Cut/ drill object/ wall as per requirement P8. Cut and clean pipe P9. Thread the pipe and apply seal tape P10. Fix accessories as per given drawing P11. Level the pipe P12. Install the pipes according to standards P13. Clean tools & work area to ensure good housekeeping
CU2. Install different types of valves	P1. Arrange approved drawing as per given task/job P2. Ensure HSE requirements P3. Select tool/equipment/material as per requirement P4. Isolate/shut off the system as per requirement P5. Install valve on its position according to given drawing P6. Test system after completing the task P7. Clean tools & work area to ensure good housekeeping
CU3. Install water well pipe system	P1. Confirm the depth of earth drilling (bore) P2. Insert appropriate casing pipe by joining each other P3. Install injector valve for deep well pump P4. Install pipes in both lines of injector P5. Install top flange P6. Fixing pump with flange P7. Install discharge pipe as required P8. Install submersible pump as per standard procedure P9. Clamp steel wire with Submersible pump



P10. Connect electrical wire

P11. Insert Submersible pump along with pipe fitted

Knowledge & Understanding

The candidate must possess underpinning knowledge and understanding required to carry out tasks covered in this competency standard. Therefore he/she must be able to:

- Interpret drawings and layouts
- Explain the different colors used in pipes
- Knowledge of leveling and alignment procedures
- Describe the procedure of isolate/ shut off system
- Types of different fittings
- Describe purpose of pipe fittings
- Describe the types of valves
- Describe the function of different types of valves
- Knowledge of injector valve function
- Describe installation procedure of pump
- Knowledge of basic electric connections and basic electric safety

Critical Evidence(s) Required

The candidate needs to produce following critical evidence(s) in order to be competent in this competency standard:

1. Plan pipe line installation
2. Identify & use of pipe fittings according to the given drawing
3. Install (hot & cold water) pipe lines according to the given drawing
4. Identify and install valves as per drawing

Tools and Equipment

The tools and equipment required for this competency standard are given below:

S. No.	Items
1.	Cotton Gloves
2.	Goggles
3.	Safety mask
4.	Helmet
5.	Safety belt
6.	Safety Shoes
7.	Ear plug / Ear Muff
8.	Coverall
9.	Measuring Tape
10.	Combination Pliers
11.	Vernier Caliper
12.	Inside/Outside Caliper
13.	Pointing chisel
14.	Cold Chisel



15.	Ball Peen Hammer
16.	Straight Peen Hammer 2 lbs.
17.	Club Hammer
18.	Pipe Wrench 12" to 24"
19.	Pipe Vise 6" with tripod
20.	Ratchet die set ½" to 2"
21.	Ratchet die set ½" to 1 ¼"
22.	Hand Hack Saw
23.	Power Disc grinder 14"
24.	File Set
25.	Pipe Reamer Set
26.	Adjustable Wrench 8" to 12"
27.	Phillips Screw Driver Set
28.	Flat Screw Driver Set
29.	Allen Key Set
30.	Tin Snip Cutter
31.	Pipe Cutter ½" to 2"
32.	Open End Spanner Set
33.	Offset Ring Spanner Set
34.	Combination Spanner Set
35.	Hammer Drill Machine (Hilti)
36.	Hand Drill Machine
37.	Twist Drill Set
38.	Masonry Drill Set
39.	Heat Gun
40.	Magnet Sprit Level
41.	Water Level Pipe 12 meter
42.	Flaring Tool Set
43.	Swaging Tool Set
44.	Tube Cutter
45.	Bench Vise 6"
46.	Tri Square 12", 24"
47.	Plumb bob with Mason Line
48.	Pin Grinder
49.	Shovel
50.	Testing Plugs 2" to 4" expendable
51.	Baby Grinder 4"
52.	Grip Pliers
53.	Hydrostatic Testing Pump
54.	Pressure Gauges 300 psi
55.	Ball Valve
56.	Non-return Valve
57.	Pneumatic Testing Kit
58.	Laser Level
59.	Electric multimeter



Install Drainage System

Overview: This competency standard covers the skills and knowledge required to Install a drainage system. This includes laying of hanging & buried systems along with the joining of drainage line.

Competency Unit	Performance Criteria
CU1. Lay hanging system	P1. Arrange approved drawings of working area for the given task P2. Arrange PPE for the given task P3. Arrange tools/ manuals for the given task P4. Mark out the working area for the given task with the help of laser/ water level P5. Install supports for hanging pipes as per given Bottom of Pipe (BOP) P6. Lay pipes on supports as per given drawing using solvent/ push-fit jointing P7. Clean tools & work area to ensure good housekeeping
CU2. Lay buried system	P1. Arrange approved drawings of working area for the given task P2. Arrange PPE for the given task P3. Mark out the working area for the given task with the help of laser/ water level P4. Prepare bench support for laying out buried pipes P5. Lay the pipe on bench support as per invert level P6. Clean tools & work area to ensure good housekeeping
CU3. Join drainage line	P1. Arrange PPE for the given task P2. Arrange tools/ material for the given task P3. Prepare/ clean pipe edges at joint area P4. Apply approved solvent on pipes and fittings as per specification P5. Insert pipe fittings within approved time duration as per SOP P6. Adjust/ fix the pipe on supports as per given invert level P7. Perform and document tightness and pressure test of the system P8. Clean & store work area & tools to ensure good housekeeping



Knowledge & Understanding

The candidate must possess underpinning knowledge and understanding required to carry out tasks covered in this competency standard. Therefore he/she must be able to:

- Interpret piping system drawings
- Recognize and use the PPEs
- Use relative tools and materials
- Mark and Level working area
- Use laser/water level effectively
- Lay and clamp piping on supports
- Differentiate between hanging and buried piping system
- Calculate and observe invert level of piping
- Clean pipe with approved detergent
- Select and apply relevant solvent on fittings
- Join pipe fittings as per SOP
- Carry out and document tightness and pressure test

Critical Evidence(s)

The candidate needs to produce following critical evidence(s) in order to be competent in this competency standard:

- Knowledge of leveling/ invert leveling
- Awareness of different types of joints and their applications
- Perform push-fit jointing
- Perform solvent jointing
- Perform and document tightness and pressure test

Tools and Equipment required

The tools and equipment required for this competency standard are given below:

S. No.	Items
1.	Cotton Gloves
2.	Goggles
3.	Safety mask
4.	Helmet
5.	Safety belt
6.	Safety Shoes
7.	Ear plug / Ear Muff
8.	Coverall
9.	Measuring Tape
10.	Combination Pliers
11.	Pointing chisel
12.	Cold Chisel
13.	Ball Peen Hammer
14.	Straight Peen Hammer
15.	Pipe Wrench 12" to 24"
16.	Hand Hack Saw
17.	Power Disc grinder 14"
18.	File Set



19.	Pipe Reamer Set
20.	Phillips Screw Driver Set
21.	Flat Screw Driver Set
22.	Open End Spanner Set
23.	Hammer Drill Machine (Hilti)
24.	Hand Drill Machine
25.	Twist Drill Set
26.	Masonry Drill Set
27.	Heat Gun
28.	Magnet Sprit Level
29.	Water Level
30.	Tri Square 12" 24"
31.	Plumb bob with Mason Line
32.	Shovel
33.	Pick axe for digging
34.	Wheel barrow
35.	Chiseler (Jack Hammer Machine)
36.	Trowel Adhesive
37.	Mortar Pan
38.	Testing Plugs 2" to 4"
39.	Pressure test set
40.	Tightness test set



102200846 Apply Work Health and Safety Practices (WHS)

Overview: This unit describes the skills to work with safety and participate in hazard assessment activities, follow emergency procedures and participate OHS practices in process.

Competency Units	Performance Criteria
CU1. Implement safe work practices at work place	P1. Implement relevant rules and procedures of WHS at work place. P2. Comply with duty of care requirements P3. Use personal protective equipment according to safe work practices P4. Contribute to WHS consultative activities P5. Raise WHS issues with relevant personnel
CU2. Participate in hazard assessment activities a work place	P1. Identify hazards or WHS issues in the workplace to relevant personnel P2. Assess and control risks according to own level of responsibility, in line with workplace procedures P3. Report hazards or WHS issues in the workplace to relevant personnel P4. Document risk control actions as required
CU3. Follow emergency procedures at workplace	P1. Report emergencies or incidents promptly to relevant personnel P2. Deal with emergencies in line with own level of responsibility P3. Implement evacuation procedures as required
CU4. Participate in OHS consultative processes	P1. Contribute to workplace meetings, inspections or other consultative activities P2. Raise OHS (Occupational Health and Safety) issues with designated persons in accordance with organizational procedures P3. Take actions to eliminate workplace hazards or to reduce risks



Knowledge and Understanding

The candidate must be able to demonstrate underpinning knowledge and understanding required to carry out tasks covered in this competency standard. This includes the knowledge of:

- K1:** Outline the WHS rights and responsibilities that apply to own role
- K2:** Explain the term duty of care
- K3:** Describe typical health and safety roles in the workplace
- K4:** List and describe common safety signs and symbols
- K5:** Explain procedures for reporting hazards, risks, incidents and accidents
- K6:** Identify and describe common hazards and major causes of accidents relevant to the workplace
- K7:** Explain what the term risk control means
- K8:** List and describe potential emergency situations and how to respond to them

Critical Evidence(s) Required

The candidate needs to produce following critical evidence(s) in order to be competent in this competency standard:

Demonstrate evidences of the Health and safety Processes to avoid any incident.



041700840 Identify and Implement Workplace Policy and Procedures

Overview: This unit describes the skills and knowledge required to develop and implement a workplace policy & procedures and to modify the policy to suit changed circumstances. It applies to individuals with managerial responsibilities who undertake work developing approaches to create, monitor and improve strategies and policies within workplaces and engage with a range of relevant stakeholders and specialists.

Competency Units	Performance Criteria
CU1. Identify workplace policy & procedures	P1. Identify the workplace policy & procedures P2. Apply appropriate strategies that can be used to measure whether your workplace health and safety obligations are being met. P3. Assure the policies are realistic, resources and personnel to implement P4. Implement the policy & procedures that reflects the organizations commitments P5. Ensure the appropriate methods of implementation, outcomes and performance indicators
CU2. Implement workplace policy & procedures	P1. Apply and assign responsibility for recording systems to track continuous improvements in policy & procedures P2. Implement strategies for continuous improvement in effective and efficient information
CU3. Communicate workplace policy & procedures	P1. Communicate procedures to help implement workplace policy P2. Inform those involved in implementing the policy about expected outcomes, activities to be undertaken and assigned responsibilities
CU4. Review the implementation of workplace policy & procedures	P1. Identify the trends that may require remedial actions P2. Record the trends that may require remedial actions. P3. Ensure policy and procedures as required are made for continuous improvement of performance



Knowledge and Understanding

The candidate must be able to demonstrate underpinning knowledge and understanding required to carry out tasks covered in this competency standard. This includes the knowledge of:

- K1:** Legislation, regulations and codes of practice applicable to the organization
- K2:** internal and external sources of information and organizational policy & procedures
- K3:** Typical barriers to implementing policies and procedures in an organization.

Critical Evidence(s) Required

The candidate needs to produce following critical evidence(s) in order to be competent in this competency standard:

Identify evidences of the ability to implement work place policy and procedures. briefly identify work place procedures to avoid incident.



001100852 Communicate at Workplace

Overview: This unit describes the performance outcomes, skills and knowledge required to develop communication skills in the workplace. It covers gathering, conveying and receiving information, along with completing assigned written information under direct supervision.

Competency Units	Performance Criteria
CU1. Communicate within the organization	P1. Communicate within a department P2. Communicate with other departments. P3. Use various media to communicate effectively P4. Communicate orally and written
CU2. Communicate outside the organization	P1. Deal with vendors P2. Deal with clients/customers P3. Interact with other organisations P4. Use various media to communicate effectively P5. Work with people of different cultures / backgrounds
CU3. Communicate effectively in workgroup	P1. Assess the issues to provide relevant suggestion to group members P2. Resolve the issues/ problems /conflicts within the group P3. Arrange group working sessions to increase the level of participation in the group processes P4. Communicate messages to group members clearly to ensure interpretation is valid P5. Communicate style /manner to reflect professional standards/ awareness of appropriate cultural practices P6. Act upon constructive feedback
CU4. Communicate in writing	P1. Identify relevant procedures for written information P2. Use strategies to ensure correct communication in writing .i.e. • correct composition • clarity • comprehensiveness • accuracy • appropriateness P3. Draft assigned written information for approval, ensuring



	it is written within designated timeframes P4. Ensure written information meets required standards of style, format and detail P5. Seek assistance / feedback to aid communication skills development
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Knowledge and Understanding

The candidate must be able to demonstrate underpinning knowledge and understanding required to carry out the tasks covered in this competency standard. This includes the knowledge of:

- K1:** Importance of intra and inter organizational communication
- K2:** Basics of business communication
- K3:** Defining Modes of communication
- K4:** Effective communication in workgroup
- K5:** Communicating through writing
- K6:** The importance of teamwork

Critical Evidence(s) Required

The candidate needs to produce following critical evidence(s) in order to be competent in this competency standard:

In your current position, what types of written communication do you use most often? (List them all).



061100858 Perform Computer Application Skills

Overview: This unit describes the skills and knowledge required to use spreadsheet applications, prepare in page documents, develops familiarity with Word, Excel, Access, PowerPoint, email, and computer graphics basics.

It applies to individuals who perform a range of routine tasks in the workplace using a fundamental knowledge of spreadsheets, Microsoft office and computer graphics in under direct supervision or with limited responsibility.

Competency Units	Performance Criteria
CU1. Prepare In-page documents as per required information	P1. Set keyboard preferences according to information requirements P2. Layout Page according to information requirements P3. Toggle between Languages P4. Identify the usage of tool bar P5. Insert Columns as per requirement P6. Print the document
CU2. Prepare Spreadsheets as per required information	P1. Create workbook according to information requirements P2. Insert sheet according to information requirements P3. Enter basic formulae / functions using cell referencing when required P4. Correct formulas when error messages occur P5. Use a range of common tools during spreadsheet development P6. Edit columns and rows within the spreadsheet Filter data P7. Save the spreadsheet to a folder on a storage device P8. Format spreadsheet using formatting features as required P9. Incorporate object and chart in spreadsheet P10. Print spreadsheet
CU3. Use MS Office as per required information	P1. Use Microsoft Word for documentation P2. Use Microsoft Excel for documentation P3. Use Microsoft PowerPoint for presentation P4. Perform OneNote P5. Perform Outlook for emails P6. Perform Publisher applications



CU4. Perform computer graphics in basic applications	P1. Perform graphic fundamentals in basic applications P2. Draw Points and lines to make images P3. Draw Dots in space to make images P4. Draw lightening blot Shapes to make images P5. Enlarge circles and rectangles to block in forms
CU5. Create Email account for communications	P1. Make email account for communications P2. . Compose text of an email message according to organizational guidelines as required P3. Create an automatic signature for the user P4. Attach files to email message where required P5. Send email message P6. Reply to / forward a received message using available features P7. Save an attachment to the relevant folder P8. Save email message using available settings P9. Adjust email accounts to restrict and quarantine possible email security problems • Print email message as per requirements

Knowledge and Understanding

The candidate must be able to demonstrate underpinning knowledge and understanding required to carry out the tasks covered in this competency standard. This includes the knowledge of:

- K1:** List basic technical terminology related to reading help files and prompts
- K2:** Explain the effect of formatting and appearance on the readability and usability of spreadsheets
- K3:** Outline log-in procedures relating to accessing a personal computer (PC)
- K4:** Describe the purpose, use and function of spreadsheet applications.
- K5:** Understand **MS Word** to create documents, flyers, publications
- K6:** Understand **MS PowerPoint** to create presentations
- K7:** Understand **MS Excel** to store, organize, and manipulate data
- K8:** Understand **OneNote** to organize data you collect including handwritten notes, drawings, screen captures, audio clips, and more
- K9:** Understand of **Publisher** to create extensive publications, posters, flyers, menus



K10: Understand **Outlook** to manage email and calendars, to do lists, and contacts

Critical Evidence(s) Required

The candidate needs to produce following critical evidence(s) in order to be competent in this competency standard:

- Create spreadsheets
- Customize basic settings
- Format spreadsheets
- Apply basic formulas
- Insert objects and charts in spreadsheets
- Save and print spreadsheets.



041300867 Manage Personal Finances

Overview: This unit of competency describes the outcomes required to manage develop, implement and monitor a personal budget in order to plan regular savings and manage debt effectively.

Competency Units	Performance Criteria
CU1. Develop a personal budget	P1. Calculate current living expenses using available information to prepare a personal budget. P2. Keep a record of all income and expenses for a short period of time to help estimate ongoing expenses. P3. Subtract total expenses from total income to determine a surplus or deficit budget for the specified period. P4. Find reasons for a deficit budget and ways to reduce expenditure identified. P5. Identify ways to increase income
CU2. Develop long term personal budget	P1. Analyze income and expenditure and set long term personal financial goals. P2. Develop a long-term budget based on the outcomes of short-term budgeting. P3. Identify obstacles that might affect the business P4. Formulate a regular savings plan based on budget
CU3. Identify ways to maximize future finances	P1. Determine sources to maximize personal income, P2. Get further education or training to maintain or improve future income. P3. Identify the need for debt to finance living and other expenses, P4. Determine the appropriate levels of debt and repayment. P5. Consolidate existing debt, where possible, to minimize interest costs and fees. P6. Seek professional money management services.



Knowledge and Understanding

The candidate must be able to demonstrate underpinning knowledge and understanding required to carry out tasks covered in this competency standard. This includes the knowledge of:

- K1:** Explain the abilities to plan and organize to keep records and monitor a personal budget
- K2:** Describe abilities to set and review goals
- K3:** Explain basic financial management and record keeping to enable development and management of a personal budget
- K4:** Describe benefits of financial goal setting and personal budgeting to enable effective management of personal finances
- K5:** Outline numeracy skills to compare income and expenditure

Critical Evidence(s) Required

The candidate needs to produce following critical evidence(s) to be competent in this competency standard:

Demonstrates competency to provide evidence of the ability to manage personal finances. The evidence should integrate employability skills with workplace tasks and job roles and verify competency is able to be transferred to other circumstances and environments.



Install Pumps

Overview: This competency standard covers the skills and knowledge required to install different types of pumps. These include mono-block, centrifugal, jockey, reciprocating, submersible, booster and deep well pumps.

Competency Unit	Performance Criteria
CU1. Install mono-block pump	P1. Arrange material/ accessories P2. Ensure safety precautions P3. Prepare foundation & align levelling of pump P4. Fix mono-block pump P5. Install suction line with accessories P6. Install discharge line with accessories P7. Connect water supply P8. Connect electric supply P9. Check for all operations P10. Report to supervisor/senior for completion of task/job
CU2. Install centrifugal pump	P1. Arrange material/accessories P2. Ensure safety precaution P3. Prepare foundation & align levelling of pump P4. Fix centrifugal pump P5. Check depth level P6. Install suction line with accessories P7. Install discharge line with accessories P8. Connect water supply P9. Align flanges P10. Connect electric supply P11. Check for all operations P12. Report to supervisor/senior for completion of task/job
CU3. Install reciprocating pump	P1. Arrange material/accessories P2. Ensure safety precaution P3. Prepare foundation & align levelling of pump P4. Connect pump with motor P5. Fix reciprocating pump as per requirement P6. Check Alignment of belt P7. Install suction line with accessories P8. Install discharge line with accessories



	P9. Connect water supply P10. Align flanges P11. Connect electric supply P12. Check for all operations P13. Report to supervisor/senior for completion of task/job
CU4. Install jockey pump	P1. Arrange tools/ material for the given task P2. Ensure safety precaution related to the given task P3. Prepare foundation & align levelling of pump P4. Fix jockey pump P5. Install suction line according to the SOP P6. Install drainage line according to the SOP P7. Grout as per requirement P8. Connect water supply P9. Connect electric supply P10. Check for all operations P11. Report to supervisor/senior for completion of task/job
CU5. Install submersible pump	P1. Arrange material/accessories P2. Ensure safety precaution related to the given task P3. Perform measurement of pipes P4. Insert pump connecting delivery pipes P5. Connect water supply P6. Connect electric supply P7. Check for all operations P8. Report to supervisor/senior for completion of task/job
CU6. Install deep well pump	P1. Arrange material/accessories P2. Ensure safety precaution related to the given task P3. Prepare measurement of pipes P4. Prepare foundation as per job/task P5. Fix deep well pump P6. Connect NRV and injector with pump P7. Connect water supply P8. Connect electric supply P9. Check for all operations P10. Report to supervisor/senior for completion of task/job
CU 7: Install different booster pumps	P1. Arrange material/accessories required for installation of pump P2. Fix the pump and install Suction and Discharge Lines



- P3.** Connect Electricity and run the pump to check the operation.
- P4.** Follow relevant health and safety requirements during installation of pump
- P5.** Check for all operations
- P6.** Report to supervisor/senior for completion of task/job

Knowledge & Understanding

The candidate must possess underpinning knowledge and understanding required to carry out tasks covered in this competency standard. Therefore he/she must be able to:

- Identify the types of pumps
- Explain the parts of pump
- Explain the function and working principle of different pumps
- Define repair and maintenance of different types of pumps
- Describe the usage of different types of pumps
- Explain the function of impeller in Centrifugal pump
- Explain the function of piston in Reciprocating pump
- Alignment of belts in Reciprocating pump
- Alignment of foundation with motor
- Alignment of pump flanges with suction & discharge
- Describe the material of casing in Submersible pump
- Knowledge of electrical connections in pumps
- Knowledge of common pump circuits and electrical protective devices
- Explain about efficiency of different pumps
- Explain about prime movers of pumps

Critical Evidence(s)

The candidate needs to produce following critical evidence(s) in order to be competent in this competency standard:

- Install mono block pump
- Install centrifugal pump
- Install reciprocating pump

Tools and Equipment required

The tools and equipment required for this competency standard are given below:

S. No.	Items
1.	Leather Gloves
2.	Cotton Gloves
3.	Goggles
4.	Safety mask
5.	Helmet
6.	Safety belt



7.	Safety Shoes
8.	Ear plug / Ear Muff
9.	Coverall
10.	Measuring Tape
11.	Combination Pliers
12.	Vernier Caliper
13.	Inside/ Outside Caliper
14.	Pointing chisel
15.	Cold Chisel
16.	Ball Peen Hammer
17.	Straight Peen Hammer 2 lbs.
18.	Club Hammer
19.	Pipe Wrench 12" to 24"
20.	Pipe Vise 6" with tripod
21.	File Set
22.	Adjustable Wrench 8" to 12"
23.	Phillips Screw Driver Set
24.	Flat Screw Driver Set
25.	Allen Key Set
26.	Tin Snip Cutter
27.	Open End Spanner Set
28.	Offset Ring Spanner Set
29.	Combination Spanner Set
30.	Hammer Drill Machine (Hilti)
31.	Masonry Drill Set
32.	Magnet Sprit Level
33.	Water Level Pipe 12 meter
34.	Tri Square 12", 24"
35.	Plumb bob with Mason Line
36.	Grip Pliers
37.	RPM Meter
38.	Multi Meter
39.	Mono-block Pump
40.	Centrifugal Pump
41.	Reciprocating Pump
42.	Submersible Pump
43.	Jockey Pump
44.	Deep well Pump
45.	Booster Pump



Install Pipe Fixture

Overview: This competency standard covers the skills and knowledge required to install pipe fixture. These include installation of pneumatic components, sanitary ware, hot water appliances, gas appliances, and water storage tanks.

Competency Unit	Performance Criteria
CU1. Install pneumatic components	P1. Arrange approved drawing as per given task/job P2. Ensure safety precautions and adopt PPEs P3. Select tools/equipment/material as per requirement P4. Install pressure gauge according to the given drawing P5. Install the pneumatic component as per the given task/ job P6. Ensure isolation of the system P7. Report to supervisor/senior for completion of task/job P8. Clean tools & work area to ensure good housekeeping
CU2. Install sanitary ware	P1. Arrange approved drawing P2. Ensure safety precautions & adopt PPEs P3. Select tools/equipment/material as per requirement P4. Cut the pipe according to drawing P5. Fix accessories and silicone where needed P6. Mark as the fastener's position P7. Install fixture as per manufacturer's recommendation P8. Connect water supply/drainage system P9. Check the operation P10. Clean tools & work area to ensure good housekeeping
CU3. Install hot water appliances	P1. Arrange approved drawing P2. Ensure safety precautions & adopt PPEs P3. Select tools/equipment/ material as per requirement P4. Ensure installation point as per requirement P5. Measure the required length of pipe P6. Mark the pipe as per requirement P7. Cut the pipe P8. Fix accessories and silicone where needed P9. Install the appliance as per manufacturer's recommendation P10. Connect piping system with hot water appliance P11. Start pipe run P12. Check the operation



	P13. Clean tools & work area to ensure good housekeeping
CU4. Install gas appliances	P1. Arrange approved drawing P2. Ensure safety precautions & adopt PPEs P3. Select tools/equipment/material as per requirement P4. Measure the required length of pipe P5. Mark the pipe as per requirement P6. Cut the pipe P7. Fix accessories P8. Install the appliance as per manufacturer's recommendation P9. Connect piping system with appliance P10. Perform and document pressure and tightness test P11. Connect gas supply P12. Start pipe run P13. Check the operation P14. Clean tools & work area to ensure good housekeeping
CU5. Install water storage tank	P1. Arrange approved drawing P2. Ensure safety precautions & adopt PPEs P3. Select tools/equipment/material as per requirement P4. Ensure tank foundation as per requirement P5. Install the tank P6. Measure the required length of pipe P7. Mark the pipe as per requirement P8. Cut the pipe P9. Fix accessories P10. Connect piping system with water tank P11. Start pipe run P12. Check the operation P13. Clean tools & work area to ensure good housekeeping

Knowledge & Understanding

The candidate must possess underpinning knowledge and understanding required to carry out tasks covered in this competency standard. Therefore he/she must be able to:

- Describe Pneumatic system
- Define procedure of installation of pneumatic system components
- Definition of sanitary ware
- Explain importance and function of different sanitary ware
- Define different types of sanitary fixtures & fittings
- Define procedure of installation of different sanitary wares



- Define hot water appliances and their types
- Define procedure of installation of hot water appliances
- Define gas appliances and their types
- Define procedure of installation of gas appliances
- Describe water storage tank
- Describe the purpose of water storage tank
- Define procedure of installation of water tank

Critical Evidence(s)

The candidate needs to produce following critical evidence(s) in order to be competent in this competency standard:

- Install sanitary wares as per given task
- Install pneumatic components as per given task
- Install hot water appliances as per given task
- Install gas appliances as per given task
- Install water storage tank as per given task

Tools and Equipment required

The tools and equipment required for this competency standard are given below:

S. No.	Items
1.	Leather Gloves
2.	Cotton Gloves
3.	Goggles
4.	Safety mask
5.	Helmet
6.	Safety belt
7.	Safety Shoes
8.	Ear plug / Ear Muff
9.	Coverall
10.	Measuring Tape
11.	Combination Pliers
12.	Vernier Caliper
13.	Inside/Outside Caliper
14.	Pointing chisel
15.	Cold Chisel
16.	Straight Peen Hammer 2 lbs.
17.	Pipe Wrench 12" to 24"
18.	Pipe Vise 6" with tripod
19.	Ratchet die set ½" to 2"
20.	Hand Hack Saw
21.	File Set
22.	Pipe Reamer Set
23.	Adjustable Wrench 8" to 12"



24.	Phillips Screw Driver Set
25.	Flat Screw Driver Set
26.	Allen Key Set
27.	Pipe Cutter ½" to 2"
28.	Open End Spanner Set
29.	Offset Ring Spanner Set
30.	Combination Spanner Set
31.	Hammer Drill Machine (Hilti)
32.	Hand Drill Machine
33.	Twist Drill Set
34.	Masonry Drill Set
35.	Hydraulic Pipe Bender
36.	Heat Gun
37.	Magnet Sprit Level
38.	Water Level Pipe 12 meter
39.	Bench Vise 6"
40.	Tri Square 12", 24"
41.	Plumb bob with Mason Line
42.	Pressure test set
43.	Tightness test set



Test Piping System

Overview: This competency standard covers the skills and knowledge required to test/ commission piping system. These include liquid penetration test, hydrostatic test, pneumatic test & gravity test.

Competency Unit	Performance Criteria
CU1. Perform liquid penetration test	P1. Arrange material for testing P2. Ensure safety precautions & adopt PPEs P3. Clean weld with rag P4. Apply cleaner and wait for 30 minutes P5. Apply developer and leave for 1 ½ hours P6. Inspect for cracks (documentation)
CU2. Perform hydrostatic test	P1. Arrange material for testing assembly P2. Ensure safety precautions & adopt PPEs P3. Connect assembly with pipe circuit P4. Fill pipe circuit with water P5. Perform air purging P6. Apply pressure as per standard procedure P7. Hold pressure as per standard procedure P8. Inspect and verify (documentation)
CU3. Perform pneumatic test	P1. Arrange material for testing P2. Ensure safety precautions & adopt PPEs P1. Install pneumatic testing kit with pipe system P2. Connect compressor with testing kit P3. Apply pressure as per requirement P4. Inspect & verify as per requirement (documentation)
CU4. Perform gravity test	P1. Arrange material for testing P2. Ensure safety precautions & adopt PPEs P3. Plug all lower points P4. Fix stack as per requirement P5. Fill pipe with water P6. Inspect pipe work for leakage (documentation)



Knowledge & Understanding

The candidate must possess underpinning knowledge and understanding required to carry out tasks covered in this competency standard. Therefore he/she must be able to:

- Explain testing of piping system
- State deferent types of testing
- Define procedure of liquid penetration test
- Define procedure of hydrostatic test
- Define procedure of pneumatic test
- Define procedure of gravity test
- Define procedure of gas pipe test

Critical Evidence(s)

The candidate needs to produce following critical evidence(s) in order to be competent in this competency standard:

- Perform liquid penetration test
- Perform hydrostatic test
- Perform pneumatic test
- Perform gravity test
- Perform gas pipe test

Tools and Equipment

The tools and equipment required for this competency standard are given below:

S. No.	Items
1.	Cotton Gloves
2.	Goggles
3.	Safety mask
4.	Helmet
5.	Safety belt
6.	Safety Shoes
7.	Coverall
8.	Combination Pliers
9.	Straight Peen Hammer 2 lbs.
10.	Pipe Wrench 12" to 24"
11.	Hand Hack Saw
12.	File Set
13.	Adjustable Wrench 8" to 12"
14.	Phillips Screw Driver Set
15.	Flat Screw Driver Set
16.	Pipe Cutter ½" to 2"
17.	Open End Spanner Set
18.	Offset Ring Spanner Set
19.	Combination Spanner Set



20.	Water Level
21.	Plumb bob with Mason Line
22.	Grip Pliers
23.	Hydrostatic Testing Pump
24.	Pressure Gauges 300 psi
25.	Pneumatic Testing Kit
26.	Laser Level



Maintain Pipelines

Overview: This competency standard covers the skills and knowledge required for the maintenance of pipeline. Different types of maintenance are covered in this competency standard along with the installation of a tracing system.

Competency Unit	Performance Criteria
CU1. Perform periodic maintenance	P1. Prepare maintenance schedule according to SOP P2. Fill up/ check log sheet according to SOP P3. Arrange/Use PPE to perform task P4. Arrange tools/ materials to perform the given task P5. Lockout/ tag out substance supply & report P6. Carry scheduled maintenance according to manual P7. Conduct final inspection according to SOP P8. Clean tools & work area to ensure good housekeeping P9. Provide feedback to the supervisor
CU2. Perform breakdown maintenance	P1. Inspect for breakdown maintenance P2. Prepare plan for breakdown maintenance P3. Arrange alternate system at breakdown according to manual P4. Study the log sheet thoroughly before breakdown maintenance P5. Arrange/Use PPE to perform task P6. Arrange tools/ material to perform the given task P7. Lockout/ tag out substance supply & report P8. Perform maintenance according to the manual P10. Conduct final inspection according to SOP P11. Clean tools & work area to ensure good housekeeping P9. Provide feedback to the supervisor
CU3. Install tracing system	P1. Refer manual for tracing system according to SOP P2. Verify tags on all equipment as per approved drawing P3. Verify stenciling on all types of piping as per approved drawing

Knowledge & Understanding

The candidate must possess underpinning knowledge and understanding required to carry out tasks covered in this competency standard. Therefore he/she must be able to:

- Know the importance and types of maintenance schedules
- Know the use of log sheets
- Recognize and use the PPEs
- Use relative tools and materials



- Check/ verify tagging as per manuals
- Adopt process of inspection
- Differentiate between different types of maintenance
- Know the procedure of alternate systems
- Know how to operate and install tracing system
- Use and installation of stenciling system

Critical Evidence(s)

The candidate needs to produce following critical evidence(s) in order to be competent in this competency standard:

- Lockout/ tag out substance supply
- Reading of and fill up/ check log sheet and using of equipment manuals
- Traceability of breakdown and arrange alternate system

Tools and Equipment required

The tools and equipment required for this competency standard are given below:

S. No.	Items
1.	Leather Gloves
2.	Cotton Gloves
3.	Goggles
4.	Safety Mask
5.	Helmet
6.	Safety belt
7.	Safety Shoes
8.	Ear plug / Ear Muff
9.	Overall
10.	Measuring Tap
11.	Combination Pliers
12.	Vernier Caliper
13.	Inside/Outside Caliper
14.	Pointing chisel
15.	Cold Chisel
16.	Ball Peen Hammer
17.	Straight Peen Hammer
18.	Club Hammer
19.	Pipe Wrench 12" to 24"
20.	Pipe Vise 6" with tripod
21.	Rachid die set ½" to 2"
22.	Hand Hack Saw
23.	Power Disc grinder 14"
24.	Portable Welding Machine 3 Phase 300 Amp.
25.	Face Shield and Holder with cable
26.	File Set
27.	Pipe Reamer Set
28.	Adjustable Wrench 8" to 12"
29.	Phillips Screw Driver Set
30.	Flat Screw Driver Set
31.	Allen Key Set



32.	Tin Snap Cutter
33.	Pipe Cutter ½" to 2"
34.	Open End Spanner Set
35.	Offset Ring Spanner Set
36.	Hammer Drill Machine (Hilti)
37.	Hand Drill Machine
38.	Twist Drill Set
39.	Masonry Drill Set
40.	Hydraulic Pipe Bender
41.	Heat Gun
42.	Fusion Machine (PPRC set 20mm to 63mm)
43.	Gas Cutter Set with Torch, Pipe and Cylinders
44.	Magnate Sprit Level
45.	Water Level Pipe
46.	Soldering Machine
47.	Flaring Tool Set
48.	Swaging Tool Set
49.	Tube Cutter
50.	Bench Vise 6"
51.	Tri Square 12" 24"
52.	Plumb bob with Mason Line
53.	Different Tags and Locks
54.	Process SOPs
55.	Equipment Maintenance Manuals
56.	Log Book
57.	Kerosene Oil
58.	Cutting Oil
59.	WD40
60.	Grease
61.	Cotton Rags
62.	Hack Saw Blade
63.	Emery Paper
64.	Baby Grinder 4"
65.	Grinding Disc 4"
66.	Cutting Disc 4"
67.	Disc 14" Power Cutter
68.	Pin Grinder
69.	Stone for Pin Grinder
70.	Wire Brush for Pin Grinder
71.	Wire Brush (Steel Wire)
72.	Grip Pliers
73.	Multimeter
74.	Insulating mat



102200848 Contribute to Work Related Health and Safety (WHS) Initiatives

Overview: This unit describes the skills and knowledge required to manage the identification, review, development, implementation and evaluation of effective participation and consultation processes as an integral part of managing work health and safety (WHS).

Competency Units	Performance Criteria
CU1. Contribute to initiate work-related health and safety measures	P1. compile database on work-related health and safety P2. Identify measures that address legal obligations. P3. Consult with individuals/ parties to formulate measures and initiatives P4. Consult with individuals/parties to identify factors impacting on work-related health and safety P5. Participate in consultative meetings.
CU2. Contribute to establish work-related health and safety measures	P1. Assist in planning of work-related health and safety measures P2. Contribute to the development of work-related health and safety measures P3. Identify to implement work-related health and safety measures i.e. • resourcing requirements, • timelines • responsibilities P4. Assist to implement work-related health and safety measures and initiatives i.e. • scheduling • liaison • administering resources • communication
CU3. Contribute to ensure legal requirements of WHS measures	P1. Identify WHS legal requirements P2. Apply knowledge of all aspects of WHS measures to • Consultation • workplace policies • participation processes P3. Ensure, WHS measures are in accordance with legal requirements



CU4. Contribute to review WHS measures	P1. Develop effective practices to review work-related health and safety measures P2. Assist individuals and parties related to WHS measures in following activities • preparing reports • communicating review • evaluating outcomes
CU5. Evaluate the organization's WHS system	P1. Assess ongoing compliance with OHS (Occupational Health and safety) P2. Take feedback from concerned persons regarding WHS measures. P3. Assess the overall effectiveness of WHS management practices P4. Assist the development process of WHS measures in following ways • Suggest amendments • Document amendments • Implement amendments P5. Take feedback from concerned persons regarding WHS measures. P6. Communicate improvements in WHS Measures

Knowledge and Understanding

The candidate must be able to demonstrate underpinning knowledge and understanding required to carry out tasks covered in this competency standard. This includes the knowledge of:

- K1:** Explain the application of relevant mandatory health monitoring, including biological monitoring, to help secure work health and safety
- K2:** Explain the difference between work-related health and safety measures and initiatives designed to meet specific legislative requirements and obligations, and those designed to support non-statutory health promotion programs, and give examples of each
- K3:** List factors that impact on work-related health and safety and their potential effects
- K4:** Identify internal and external sources of WHS information and data, and how to access them
- K5:** Outline organizational WHS and other relevant policies, procedures, processes and systems, including human resources



- K6:** Summarize relevant WHS legislation, other legislation (such as privacy and workers compensation) and common law rights and duties specific to work-related health and safety measures and initiatives
- K7:** Describe work-related health and safety measures and initiatives that either address specific legislative requirements and obligations, or support non-statutory health prevention programs, including:
- The factors impacting on worker health and safety that they address
 - Effectiveness
 - Costs and benefits
 - Criteria for decisions regarding their implementation in a specific workplace
 - How they should be implemented.

Critical Evidence(s) Required

The candidate needs to produce following critical evidence(s) to be competent in this competency standard:

A person who demonstrates competency in this unit must be able to provide evidence of the ability to contribute work-related health and safety measures and initiatives. The evidence should integrate employability skills with workplace tasks and job roles and verify competency is able to be transferred to other circumstances and environments.



041700841 Comply with Workplace Policy and Procedures

Overview: This unit describes the skills and knowledge required to implement a workplace policy & procedures and to modify the policy to suit changed circumstances. It applies to individuals with managerial responsibilities who undertake work developing approaches to create, monitor and improve strategies and policies within workplaces and engage with a range of relevant stakeholders and specialists.

Competency Units	Performance Criteria
CU1. Manage work timeframes	P1. Complete work tasks within deadlines in according to order of priority P2. Supervisors are informed of any delays in work times or projects
CU2. Manage to convene meeting	P1. Develop agenda in line with meeting purpose P2. Select participants and notify them accordingly P3. Carryout meeting arrangements according to the time P4. Record the minutes of the meeting
CU3. Decision making at workplace	P1. Identify the problem, challenge or opportunity P2. Generate an array of possible solutions or responses P3. Evaluate the costs and benefits associated with each option P4. Assess the impact of the decision and modify the course of action as needed
CU4. Set and meet own work priorities at instant	P1. Take initiative to prioritize and facilitate competing demands to achieve organizational goals and objectives P2. Use technology efficiently and effectively to manage work priorities and commitments P3. Maintain appropriate work-life balance
CU5. Develop and maintain professional competence	P1. Assess personal knowledge and skills against competency P2. Participate in networks to enhance personal knowledge, skills and work relationships P3. Seek feedback from employees, clients and colleagues to develop and improve competence



CU6. Follow and implement work safety requirements	P1. Identify and report emergency incidents P2. Practice organizational policy and procedures for responding to emergency incidents P3. Identify and implement workplace procedures and work instructions for controlling risks
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Knowledge and Understanding

The candidate must be able to demonstrate underpinning knowledge and understanding required to carry out tasks covered in this competency standard. This includes the knowledge of:

- K1:** Healthy work life balance
- K2:** Meeting terminologies, structures and arrangements
- K3:** Relevant organizational procedures and policies regarding meetings, chairing and minutes.
- K4:** Barriers to implement policies and procedures in an organization and possible strategies to address them.

Critical Evidence(s) Required

The candidate needs to produce following critical evidence(s) to be competent in this competency standard:

A person who demonstrates competency in this unit must be able to provide evidence of the ability to understand workplace policy and procedures. The evidence should integrate employability skills with workplace tasks and job roles and verify competency is able to be transferred to other circumstances and environments.



001100853 Perform Advanced Communication

Overview: This unit describes the performance outcomes, skills and knowledge required to develop communication skills used professionally. It covers plan and organise work and conduct trainings at workplace, along with demonstrating professional skills independently.

Competency Units	Performance Criteria
CU1. Demonstrate professional skills	P1. Use different modes of communication to communicate • Speaking • Reading • Writing • Listening • Presentation • visual representation etc P2. Develop CV Skills according requirements P3. Upgrade professional skills by attending trainings, webinars, conferences etc. P4. Perform Continuous professional development as required at workplace P5. Develop interview skills
CU2. Plan and Organize work	P1. Identify task requirements. P2. Plan steps to complete tasks. P3. Review planning and organizing process. P4. Organize work.
CU3. Provide trainings at workplace	P1. Assess the need for training P2. Prepare trainees for the learning experience P3. Present training session P4. Support trainees in managing their own learning P5. Facilitate group learning P6. Provide opportunity for practice P7. Provide feedback on progress on trainees P8. Review delivery experience



Knowledge and Understanding

The candidate must be able to demonstrate underpinning knowledge and understanding required to carry out the tasks covered in this competency standard. This includes the knowledge of:

- K1:** Explaining the training skills
- K2:** Identification of the professional skills
- K3:** Describing the advanced language skills
- K4:** Understanding of the assessment and trainees feedback methods
- K5:** Direct and indirect communication methods
- K6:** Explaining the need of the training type at the work place

Critical Evidence(s) Required

The candidate needs to produce following critical evidence(s) in order to be competent in this competency standard:

- Job sheet
- Office emails and coordination reports
- Feedback proforma



061100858 Develop Advance Computer Application Skills

Overview: This unit provides an overview of Microsoft Office programs to create personal, academic and business documents following current professional and/or industry standards, i.e. Data Entry, Power Point Presentation and managing data base and graphics for Design

It applies to individuals employed in a range of work environments who need to be able to present a set range of data in a simple and direct forms

Competency Units	Performance Criteria
CU1. Manage Information System to complete a task	P1. Perform Data Entry in MS office P2. Manage File/folder in MS office P3. Perform Scanning of document P4. Maintain Office Record in drives P5. Perform Printing of document P6. Search required Files/Folders P7. Convert Files in required format. P8. Manage sizes of Files/Folders • Compress • Zip /unzip
CU2. Prepare Presentation using computers	P1. Prepare presentation as per requirements, i.e. • Open blank presentation and add text / graphics • Create a simple design for a presentation • Apply existing styles within a presentation • Use presentation template and slides to create a presentation • Use various tools to improve the look of the presentation • Save presentation to the appropriate storage device and folder with required name P2. Customize basic settings to meet user requirements P3. Format presentation as require • Develop organizational charts • Add objects and manipulate to meet presentation purposes • Modify slide layout, including text and colours, to meet presentation requirements • Save presentation in another format



	• Save to storage device and close presentation P4. Add slide show effect into presentation as required to enhance the presentation • Incorporate pre-set Animation • Apply Multimedia effects • Record Narration • Apply hyperlink • Apply video • Rehearse Timings • Test presentation for overall effect P5. Print the presentation • Select appropriate print format for presentation • Select preferred slide orientation • Add notes and slide numbers • Preview slides and run spell check before presentation • Print selected slides and submit presentation to appropriate person for feedback P6. Practice verbal presentation P7. Practice presentation through AV Aids
CU3. Use Microsoft Access to manage database	P1. Collect the data using a standard data base package. P2. Start access to manage database .i.e. • identify problem statement of Data • Develop a table with fields /attributes according to database usage/ user requirements • Create a primary key and establish an index for each table • Modify table layout and field attributes as required • Create a relationship between the two tables • Add data in a table according to information requirements • Add records as required • delete records as required • Save database to storage area • close down database to storage area • Apply criteria in the following Query



	• SQL view of Query • Wildcards of query • Query Criteria P3. Customize basic settings: • Adjust page layout to meet user requirements • Open and view different toolbars • Format font as appropriate for the purpose of the database entries • Create reports • Design reports to present data in a logical sequence • Modify reports to include or exclude additional requirements • Distribute reports to appropriate person in a suitable format P4. Create forms • Use a wizard to create a simple form • Open existing database and modify records through a simple form • Rearrange objects within the form to accommodate information requirements
CU4. Develop graphics for Design	P1. Develop graphic design concepts based on a thorough understanding of the communication need P2. Use design techniques confidently to produce designs P3. Integrate design tools skillfully to produce designs P4. Evaluate the success of completed designs to meet objectives P5. evaluate feedback from client / peers

Knowledge and Understanding

The candidate must be able to demonstrate underpinning knowledge and understanding required to carry out the tasks covered in this competency standard. This includes the knowledge of:

K1: List basic technical terminology to read help files and prompts

K2: Outline the different types of formal and informal presentations



- K3:** Explain Power point presentation
- K4:** Segregation of Data
- K5:** Define the relation among data
- K6:** Define criteria in the query
- K7:** Creates and modify reports and forms.
- K8:** Outline basic database design principles
- K9:** Current graphic design software
- K10:** Discuss features of current and emerging technologies used in graphic design practice and the options they present for effective graphic design solution

Critical Evidence(s) Required

The candidate needs to produce following critical evidence(s) in order to be competent in this competency standard:

- Design and develop a simple database using a standard database package
- Create, format and prepare presentations for distribution and display
- Customize basic settings
- Add slide show effects.
- Generate employment report from given data by using Microsoft Access.



041300869 Manage Human Resource Services

Overview: This unit describes the skills and knowledge required to plan, manage and evaluate delivery of human resource services, integrating business ethics. It applies to individuals with responsibility for coordinating a range of human resource services across an organization. They may have staff reporting to them.

Competency Units	Performance Criteria
CU1. Determine strategies for delivery of human resource services	P1. Analyze business strategy and operational plans to determine human resource requirements P2. Review external business environment that likely impact on organization's human resource requirements P3. Consult line and senior managers to identify human resource needs in their areas P4. Review organization's requirements for diversity in the workforce P5. Deliver human resource services that comply with business goals P6. Develop strategic action plan for delivery of human resource services P7. Develop roles and responsibilities of human resource team P8. Develop quality assurance policy
CU2. Manage the delivery of human resource services	P1. Communicate human resource strategies and services to internal and external stakeholders P2. Develop and negotiate service agreements between • The human resource team, • Service providers • Client groups P3. Document service specifications, performance standards and timeframes P4. Document /communicate service • Specifications, • Performance standards • Timeframes P5. Monitor Quality assurance processes P6. Ensure that services are delivered by appropriate providers, according to service agreements and operational plans



	P7. Identify underperformance of human resource team or service providers
CU3. Evaluate human resource service delivery	P1. Establish Management information system for human resource services P2. Conduct survey to determine level of satisfaction P3. Analyze feedback of survey P4. Recommend changes to service delivery P5. Support agreed change processes across the organization
CU4. Manage integration of business ethics in human resource practices	P1. Ensure ethics in personal behavior P2. Ensure code of conduct is observed across the organization, P3. Observe confidentiality requirements in dealing with all human resource information P4. Deal promptly with unethical behavior P5. Ensure all persons responsible for human resource functions understand requirements regarding their ethical behavior

Knowledge and Understanding

The candidate must be able to demonstrate underpinning knowledge and understanding required to carry out tasks covered in this competency standard. This includes the knowledge of:

- K1:** Identify the key provisions of legal and compliance requirements that apply to managing human resources
- K2:** Summarize the organization's code of conduct
- K3:** Explain human resource strategies and planning processes and their relationship to business and operational plans
- K4:** Describe performance and contract management
- K5:** Explain how feedback is used to modify the delivery of human resources.

Critical Evidence(s) Required

The candidate needs to produce following critical evidence(s) to be competent in this competency standard:

A person who demonstrates competency in this unit must be able to provide evidence of the ability to manage human resource services. The evidence should integrate employability skills with



workplace tasks and job roles and verify competency is able to be transferred to other circumstances and environments.

Performance requirements

This competency is to be assessed using standard and authorized work practices, safety requirements and environmental constraints. Demonstrated evidence is required of the ability to:

- Plan and manage human resource delivery within legislative, organizational and business ethics frameworks
- Communicate effectively with a range of senior personnel
- Identify and arrange training support where appropriate
- Calculate human resource return on investment within the organization.



041300860 Develop Entrepreneurial Skills

Overview: This Competency Standard identifies the competencies required to develop entrepreneurial skills, in accordance with the organization's approved guidelines and procedures. You will be expected to develop a business plan, collect information regarding funding sources, develop a marketing plan and develop basic business communication skills. Your underpinning knowledge regarding entrepreneurial skills will be sufficient to provide you the basis for your work.

Competency Units	Performance Criteria
CU1. Develop a business plan	P1. Conduct a market survey to collect following information • Customer /demand • Tools, equipment, machinery and furniture with rates • Raw material • Supplier • Credit / funding sources • Marketing strategy • Market trends • Overall expenses • Profit margin P2. Select the best option in terms of cost, service, quality, sales, profit margin, overall expenses P3. Compile the information collected through the market survey, in the business plan format
CU2. Collect information regarding funding sources	P1. Identify the available funding sources based on their terms and conditions, maximum loan limit, payback time, interest rate P2. Choose the best available option according to investment requirement P3. Prepare documents according to the loan agreement requirement P4. Include the information of funding sources in the business plan
CU3. Develop a marketing plan	P1. Make a marketing plan for the business including product, price, placement, promotion, people, packaging and positioning P2. Include the information of marketing plan in the business plan



CU4. Develop basic business communication skills	P1. Communicate with internal customers e.g.: labor, partners and external customers e.g.: suppliers, customers etc., using effective communication skills P2. Use different modes of communication to communicate internally and externally e.g.: presentation, speaking, writing, listening, visual representation, reading etc. P3. Use specific business terms used in the market
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Knowledge and Understanding

The candidate must be able to demonstrate underpinning knowledge and understanding required to carry out tasks covered in this competency standard. This includes the knowledge of:

- K1:** Explain the 7ps of marketing including product, price, placement, promotion, people, packaging and positioning
- K2:** Describe 7Cs of business communication
- K3:** Define different modes of communication and their application in the industry
- K4:** Enlist specific business terms used in the industry
- K5:** Enlist the available funding sources
- K6:** Explain how to get loan to start a new business
- K7:** Explain market survey and its tools e.g: questionnaire, interview, observation etc
- K8:** Describe the market trends for specific product offering
- K9:** State the main elements of business plan
- K10:** Explain how to fill the business plan format

Critical Evidence(s) Required

The candidate needs to produce following critical evidence(s) to be competent in this competency standard:

A person who demonstrates competency in this unit must be able to provide evidence of the ability to develop Entrepreneurial Skills.

Performance requirements

- Conduct market survey and formulate business plans in terms of feasibility, investment potential, risk, and completeness.
- Demonstrate the use of both verbal and non-verbal business communication.
- Effectively present business ideas and profile



Install Steam Fittings

Overview: This competency standard covers the skills and knowledge required to install different types of steam fittings. These include installation of low-pressure steam fittings, high pressure steam fittings and steam heating fittings.

Competency Unit	Performance Criteria
CU1. Install low pressure fittings	P1. Arrange approved drawings for the given task P2. Arrange required PPE P3. Arrange tools/ material for the given task P4. Mark the pipe according to the given drawing P5. Install pipe support on marking P6. Lay pipes on installed supports P7. Weld pipes as per SOP P8. Insulate pipe according to the manual P9. Perform stenciling on pipes as per SOP P10. Clean tools & work area to ensure good housekeeping P11. Report to the supervisor
CU2. Install high pressure fittings	P1. Arrange approved drawings for the given task P2. Arrange required PPE P3. Arrange tools/ material for the given task P4. Mark the pipe according to the given drawing P5. Install pipe support on marking P6. Lay pipes on installed supports P7. Weld pipes as per SOP P8. Insulate pipe according to the manual P9. Perform stenciling on pipes as per SOP P10. Clean tools & work area to ensure good housekeeping P11. Report to the supervisor
CU3. Install steam heating fittings	P1. Arrange approved drawings for the given task P2. Arrange required PPE P3. Arrange tools/ material for the given task P4. Install piping system as per drawing P5. Connect piping with pump/ boiler as per drawing & SOP P6. Install valves/ PRV/ Bypass as per standard P7. Connect piping to the equipment as per drawing P8. Take test run on system as per SOP



- P9.** Tag out the system as required
- P10.** Perform stenciling on the system
- P11.** Clean tools & work area to ensure good housekeeping
- P12.** Report to the supervisor

Knowledge & Understanding

The candidate must possess underpinning knowledge and understanding required to carry out tasks covered in this competency standard. Therefore he/she must be able to:

- Interpret drawing and symbols for steam fitting
- Recognize and use the PPEs
- Use relative tools and materials
- Install supports for steam fitting
- Lay pipe for steam fitting
- Knowledge of pipe threads
- Understand pressure & temperature ratings
- Understand effect of expansion & contraction in different materials
- Understand the larger threats in dealing with high pressure steam systems
- Knowledge of safety measures for working at high pressure steam systems
- Weld pipe joints as per SOP
- Recognize and use of different valve
- Recognize and use of different flanges
- Recognize and use of different couplings
- Recognize and use of different gasket
- Recognize and use of pipe supports
- Install Valve / PRV / By pass according to SOP
- Knowledge of performing hydrostatic test
- Tag out all system fitting as per manual

Critical Evidence(s)

The candidate needs to produce following critical evidence(s) in order to be competent in this competency standard:

- Recognize and use pipe supports
- Perform beveling on pipe edges
- Install and explain usage of gate valve, ball type valve, PRV, strainers, globe valve, motorized valve, steam trap.
- Recognize steam gasket

Tools and Equipment required

The tools and equipment required for this competency standard are given below:

Sr. No	Items
1.	Leather Gloves
2.	Cotton Gloves
3.	Goggles



4.	Safety mask
5.	Helmet
6.	Safety belt
7.	Safety Shoes
8.	Ear plug / Ear Muff
9.	Coverall
10.	Measuring Tape
11.	Combination Pliers
12.	Vernier Caliper
13.	Straight Peen Hammer
14.	Pipe Wrench 12" to 24"
15.	Pipe Vise 6" with tripod
16.	Power Disc grinder 14"
17.	Portable Welding Machine 3 Phase 300 Amp.
18.	Face Shield and Holder with cable
19.	File Set
20.	Adjustable Wrench 8" to 12"
21.	Phillips Screw Driver Set
22.	Flat Screw Driver Set
23.	Combination Spanner Set
24.	Hammer Drill Machine (Hilti)
25.	Hand Drill Machine
26.	Twist Drill Set
27.	Masonry Drill Set
28.	Gas Cutter Set with Torch, Pipe and Cylinders
29.	Magnet Sprit Level
30.	Water Level
31.	Bench Vise 6"
32.	Tri Square 12" 24"
33.	Plumb bob with Mason Line
34.	Different Tag and Lock
35.	Grease
36.	Cotton Rags
37.	Hack Saw Blade
38.	Baby Grinder 4"
39.	Grinding Disc 4"
40.	Cutting Disc 4"
41.	Wire Brush (Steel Wire)
42.	Grip Pliers



Install Process Piping System

Overview: This competency standard covers the skills and knowledge required to install a process piping system. These include preparation & installation of process piping system, and steam condensate system.

Competency Unit	Performance Criteria
CU1. Prepare for installation of process piping system	P1. Arrange approved drawings for the given task P2. Select & use appropriate PPE P3. Make list of required material for the given task P4. Confirm the quantity & quality of the material as received P5. Prepare tools/ accessories & material according to SOP P6. Give feedback to the supervisor
CU2. Install process piping system	P1. Select appropriate tools/ material as per SOP P2. Erect piping as per specification & drawings P3. Ensure housekeeping after completion of task P4. Report to supervisor for task completion
CU3. Install steam condensate system	P1. Select appropriate tools/ material as per SOP P2. Install & connect piping to steam condensate pump & boiler P3. Conduct test run of the system P4. Ensure housekeeping after completion of task P5. Report to supervisor for task completion

Knowledge & Understanding

The candidate must possess underpinning knowledge and understanding required to carry out tasks covered in this competency standard. Therefore he/she must be able to:

- Interpret drawing and symbols for process piping
- Recognize and use PPEs
- Use relevant tools and materials
- Knowledge of pipe threads
- Weld pipe joints as per SOP
- Recognize and use of different types of valves
- Recognize and use of different types of flanges
- Recognize and use of different types of couplings
- Recognize and use of different types of gaskets
- Recognize and use of different types of pipe supports
- Install Valve / PRV / By pass according to SOP
- Knowledge of performing hydrostatic test
- Tag out all system fitting as per manual



Critical Evidence(s) Required

The candidate needs to produce following critical evidence(s) in order to be competent in this competency standard:

- Erect process piping system
- Install valve in process piping system
- Install & connect piping to steam condensate pump/ boiler

Tools and Equipment required

The tools and equipment required for this competency standard are given below:

Sr. No	Items
1.	Leather Gloves
2.	Cotton Gloves
3.	Goggles
4.	Safety mask
5.	Helmet
6.	Safety belt
7.	Safety Shoes
8.	Ear plug / Ear Muff
9.	Coverall
10.	Measuring Tape
11.	Combination Pliers
12.	Vernier Caliper
13.	Ball Peen Hammer
14.	Straight Peen Hammer
15.	Club Hammer
16.	Pipe Wrench 12" to 24"
17.	Pipe Vise 6" with tripod
18.	Power Disc grinder 14"
19.	Portable Welding Machine 3 Phase 300 Amp.
20.	Face Shield and Holder with cable
21.	File Set
22.	Adjustable Wrench 8" to 12"
23.	Phillips Screw Driver Set
24.	Flat Screw Driver Set
25.	Combination Spanner Set
26.	Hammer Drill Machine (Hilti)
27.	Hand Drill Machine
28.	Twist Drill Set
29.	Masonry Drill Set
30.	Gas Cutter Set with Torch, Pipe and Cylinders
31.	Magnet Sprit Level
32.	Water Level
33.	Bench Vise 6"
34.	Tri Square 12" 24"
35.	Plumb bob with Mason Line
36.	Different Tags and Locks
37.	Cotton Rags
38.	Hack Saw Blade
39.	Cleaning Set



11. Complete List of Tools and Equipment

S. No.	Items	Quantity
1.	Leather Gloves	50 pairs
2.	Cotton Gloves	50 pair
3.	Rubber Gloves	20 pairs
4.	Goggles	50 pair
5.	Safety mask	100 pcs
6.	Helmet	25 nos.
7.	Safety belt	08 nos.
8.	Safety Shoes	20 pairs
9.	Ear plug / Ear Muff	20 nos.
10.	Overall	20 nos.
11.	Measuring Tape & Folding Ruler	12 nos.
12.	Combination Pliers	08 nos.
13.	Vernier Caliper	04 nos.
14.	Inside/Outside Caliper	04 nos.
15.	Pointing chisel	12 nos.
16.	Cold Chisel	12 nos.
17.	Ball Peen Hammer	06 nos.
18.	Straight Peen Hammer 2 lbs.	06 nos.
19.	Club Hammer	06 nos.
20.	Pipe Wrench 12" to 36"	06 nos.
21.	Pipe Vise 6" with tripod	05 nos.
22.	Ratchet die set ½" to 2"	02 sets
23.	Hand Hack Saw	12 nos.
24.	Power Disc grinder 14"	02 nos.
25.	Portable Welding Machine 3 Phase 300 Amp.	02 nos.
26.	Face Shield and Holder with cable	04 nos.
27.	File Set	06 nos.
28.	Pipe Reamer Set	06 nos.
29.	Adjustable Wrench 8" to 12"	06 nos.
30.	Phillips Screw Driver Set (6", 8", 12")	06 nos.
31.	Flat Screw Driver Set (6", 8", 12")	06 nos.
32.	Allen Key Set	04 nos.
33.	Tin Snip Cutter	04 nos.
34.	Pipe Cutter ½" to 2"	06 nos.
35.	Open End Spanner Set (Metric)	02 nos.
36.	Open End Spanner Set (Imperial)	02 nos.
37.	Offset Ring Spanner Set (Metric)	02 nos.
38.	Offset Ring Spanner Set (Imperial)	02 nos.
39.	Combination Spanner Set (Metric)	02 nos.
40.	Combination Spanner Set (Imperial)	02 nos.
41.	Hammer Drill Machine (Hilti)	06 nos.



42.	Hand Drill Machine	06 nos.
43.	Twist Drill Set	03 sets
44.	Masonry Drill Set	03 sets
45.	Hydraulic Pipe Bender	02 nos.
46.	Heat Gun	06 nos.
47.	Fusion Machine (PPRC set 20mm ~ 63mm)	06 nos.
48.	Gas Cutter Set with Torch, Pipe	02 nos.
49.	Acetylene Cylinder	02 nos.
50.	Oxygen Cylinder	02 nos.
51.	Magnet Sprit Level	06 nos.
52.	Water Level (3 meter)	02 nos.
53.	Soldering Machine	03 nos.
54.	Flaring Tool Set	03 sets
55.	Swaging Tool Set	03 sets
56.	Tube Cutter	06 nos.
57.	Bench Vise 6"	06 nos.
58.	Tri Square 12" - 24"	06 nos.
59.	Plumb bob with Mason Line	06 nos.
60.	Shovel	06 nos.
61.	Pick axe for digging	06 nos.
62.	Wheel barrow	02 nos.
63.	Chiseler (Jack Hammer Machine)	02 nos.
64.	Chalk Liner	08 nos.
65.	Trowel Adhesive	06 nos.
66.	Mortar Pan	03 nos.
67.	Testing Plugs 2" to 4" expendable	08 nos.
68.	Hydrostatic Testing Pump	02 nos.
69.	Pressure Gauges 300 psi	03 nos.
70.	Pneumatic Testing Kit	02 nos.
71.	Laser Leveler	02 nos.
72.	Fusion Machine (PE Pipe Set) Butt Fusion	06 nos.
73.	Welding Gloves	06 pairs
74.	Mono-block Pump	01 no
75.	Centrifugal Pump	01 no
76.	Reciprocating Pump	01 no
77.	Submersible Pump	01 no
78.	Jockey Pump	01 no
79.	Deep well Pump	01 no
80.	Booster pump	
81.	Insulated mat (8 ft x 16 ft)	01 no



Consumable Items:

The tools and equipment required for this competency standard are given below:

S. No.	Items
1.	Drill Bit Set
2.	Process SOPs
3.	Equipment Maintenance Manuals
4.	Log Book
5.	Stone for Pin Grinder
6.	Wire Brush for Pin Grinder
7.	Wire Brush (Steel Wire)
8.	Chalk Liner
9.	Kerosene Oil
10.	Cutting Oil
11.	WD 40
12.	Grease
13.	Cotton Rags
14.	Hack Saw Blade
15.	Emery Paper
16.	Grinding Disc 4"
17.	Cutting Disc 4"
18.	Grinding Disc 7"
19.	Cutting Disc 7"
20.	Wall Cutting Disc 7
21.	GI Pipes (1/2" ~ 1")
22.	GI Elbow (90, 45)
23.	GI Tee
24.	GI Bend
25.	GI Union
26.	GI Cross Tee
27.	GI Socket
28.	GI Reducer
29.	Barrel Nipple
30.	M/F Elbow
31.	M/F Socket
32.	End Plug
33.	Bridge Bend
34.	Copper Pipes (3/8" ~ 3/4")
35.	Elbow (90, 45)
36.	Tee
37.	Bend
38.	Union
39.	Cross Tee
40.	Socket



41.	Reducer
42.	MS Pipes (1" ~ 4")
43.	Flanges (Welded/threaded)
44.	Tee
45.	Elbow (90/45)
46.	Bends
47.	Reducer
48.	Flanges (Welded/treaded)
49.	UPVC pipes (1/2" ~ 4")
50.	UPVC Socket
51.	UPVC Tee
52.	UPVC Elbow (90/45)
53.	UPVC Bends
54.	UPVC Reducer
55.	UPVC Y-Branch
56.	UPVC P Trap
57.	UPVC Multi flow Trap
58.	Test Plug
59.	UPVC Union
60.	UPVC Male Adopter
61.	Brass Thread Tee
62.	Brass Thread Elbow
63.	Brass Thread Union
64.	Brass Thread Socket
65.	CPVC Pipe (1/2" ~ 1")
66.	CPVC Elbow
67.	CPVC Tee
68.	CPVC Union
69.	CPVC Brass Male Adopter
70.	PPRC Pipes (20mm ~ 32mm)
71.	Socket
72.	Reducer
73.	Treaded Elbow
74.	Male Adopter
75.	Female Adopter
76.	CP Nipple
77.	PE Pipes (20mm ~ 32mm)
78.	Socket
79.	Elbow (90, 45)
80.	Tee
81.	Bend
82.	Cross Tee
83.	Reducer
84.	Flanges (Welded/threaded)



85.	Globe Valves (1" ~ 3")
86.	Safety Valve (1/2" ~ 1")
87.	Check Valve (1" ~ 3")
88.	Pressure Reducing Valve (1" ~ 3")
89.	Butterfly Valve (1" ~ 3")
90.	Injector Valve (1" ~ 1 1/2")
91.	Foot valve (1/2" ~ 1")
92.	Float Valve (1/2" ~ 1")
93.	Gate Valve (1" ~ 3")
94.	Ball Valve (1/2" ~ 1")
95.	Non-return Valve (1/2" ~ 1")
96.	Wash Basin with all fittings
97.	Water Closet (WC) European style with all fittings
98.	Urinal with all fittings
99.	Water Closet (WC) Indian style with all fittings
100.	Bidet with all fittings
101.	Water storage Tank (250 Letter) with inlet, outlet and washout connections
102.	Geyser (Gas, Electric)
103.	Kitchen Sink with all fittings
104.	CP Chain (1M)
105.	Toilet Shower
106.	Floor Drain
107.	Bib Tap
108.	Tee Cock
109.	Shower with rod
110.	Valve mixer
111.	Sink Mixer
112.	Wash basin mixer
113.	Side pillar cock
114.	Bottle Trap
115.	U Trap
116.	S Tarp
117.	Basin Waste (Complete)
118.	Teflon Tape
119.	Lock tight/ Hold tight
120.	Thread
121.	Silicon
122.	Epoxy



List of Stationary

S. No.	Items
1.	Different Tags and Locks
2.	ASTM – BS Standards
3.	Process SOPs
4.	Equipment Maintenance Manuals
5.	Log Book
6.	Handbooks
7.	Design Books/ Sheets
8.	Pencils
9.	Erasers
10.	Pencil Sharpeners
11.	Paper Cutter
12.	Scissors
13.	Color Pencils
14.	White chart paper
15.	Brown Sheets
16.	White Board Markers (red, blue, green, black)
17.	Permanent markers (black)
18.	File covers

