

PLUMBING

Assessment Package

National Vocational Certificate Level 2

Version 1 - December 2014

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Document Version

December, 2014
Islamabad, Pakistan

PLUMBING

Assessment Package

National Vocational
Certificate Level 2

Version 1 - December 2014



ASSESSMENT MATERIAL	<h1>Apply Plumber (Assistant) skills for solar water heating systems</h1>
EVIDENCE GUIDE	
Qualification code: LEN0142.v1 Level: 2 Credit: 80 Version: 1	

CONTENTS	1. Assessment Summary and Record 2. Candidate Assessment 3. Assessor Judgement Guide 4. List of required tools/ equipment, material and context of assessment
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ASSESSMENT AND ASSESSMENT PANEL DETAILS	Competent <input type="checkbox"/> Not Yet Competent <input type="checkbox"/>									
	Assessment <input type="checkbox"/> Re-Assessment <input type="checkbox"/>									
	Candidate's Instructor name:									
	Candidate's Instructor signature:									
	Private Sector Expert's name:									
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	Assessor's Name: _____ Assessor Code: <table border="1" style="display: inline-table; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table>									
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1

ASSESSMENT SUMMARY AND RECORD

ACTIVITY	METHOD				DESIRED OUTCOMES	RESULT	
	WRITTEN	ORAL	PORTFOLIO	OBSERVATION		COMPETENT	NOT YET COMPETENT
NATURE OF ACTIVITY					DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF: APPLY PLUMBER (ASSISTANT) SKILLS FOR SOLAR PV SYSTEMS		
Practical final project	✓	✓	✓	✓	Complete supplied project brief related to application of Plumber (Assistant) skills on solar PV systems: <ul style="list-style-type: none"> • Maintain workplace safety • Apply continuing professional development • Perform preventive maintenance as part of plumbing operations • Perform corrective maintenance as part of plumbing operations • Perform lay-out and excavation • Fix basic sanitary ware • Join fittings and pipes • Use and maintain plumbing tools and equipment • Demonstrate knowledge of solar water heating system types 		
Knowledge assessment		✓			<ul style="list-style-type: none"> • Answer all questions the Assessment Panel will have following oral presentation of completed project brief 		
Other requirements	✓	✓	✓	✓	<ul style="list-style-type: none"> • All completed course assignments, projects and formative assessments including: <ul style="list-style-type: none"> ○ Observations ○ Demonstrations ○ Questions and recorded answers • Oral presentation of project to assessment panel • Completed learner logbooks • Completed work forms/records • Completed job cards • Evidence of participating in training programmes • Documented training outcomes such as reports and portfolio writing • Measuring instrument calibration records 		

2

CANDIDATE ASSESSMENT

Candidate Name..... Father Name

ALL WORK ASSESSED FOR THESE COMPETENCY STANDARDS MUST BE YOUR OWN WORK.

GUIDANCE TO CANDIDATE

To meet this standard you are required to:

- Apply Plumber (Assistant) skills for solar PV systems

ACTIVITIES	CANDIDATE RESPONSE
<p>1. Complete portfolio of evidence</p>	<ul style="list-style-type: none"> • All completed formative assessments including: <ul style="list-style-type: none"> ○ Observations ○ Demonstrations ○ Questions and recorded answers • All completed course assignments and projects including: <ul style="list-style-type: none"> ○ Drawings and sketches of plumbing layouts ○ Calculations of materials, labour costs and overall costs • Completed work forms/records • Completed job cards • Evidence of development of business plan which includes: <ul style="list-style-type: none"> ○ Financial plan ○ Service and product delivery ○ Marketing strategy
<p>2. Complete project brief of applying Plumber (Assistant) skills for solar PV systems under observation by Instructor</p>	<ul style="list-style-type: none"> • I will correctly complete requirements of supplied project brief under the following conditions: <ul style="list-style-type: none"> ○ In a group or individually, as required by project brief ○ Supplied brief will require a 5 day period to complete in a workshop environment <p>Your Assessment Panel will be looking for your competence in:</p> <ul style="list-style-type: none"> ○ Demonstrating task skills, task management (integration of tasks), managing any contingencies which may arise and task outcomes throughout the project timeframe ○ Applying knowledge and skill in the working environment
<p>3. Present completed project brief to Assessment Panel</p>	<ul style="list-style-type: none"> • Oral presentation of project brief and completed project work to Assessment Panel. • Presentation to include: <ul style="list-style-type: none"> ○ Requirements of brief ○ Planning and preparation of project ○ Problems encountered and how they were dealt with ○ Project outcome/s ○ Lessons learnt from undertaking project (reflective thinking) • Presentation to take no longer than 10 minutes
<p>4. Answer all questions Assessor Panel will have following project presentation</p>	<p>My answers to questions are correct and demonstrate my understanding of the topics and their application.</p>


3

ASSESSOR JUDGEMENT GUIDE

Candidate Name Father Name

INSTRUCTIONS FOR ASSESSMENT PANEL	THIS SECTION CONTAINS MINIMUM EVIDENCE REQUIREMENTS.
	<ul style="list-style-type: none"> • The Assessment Panel will consist of three members: a registered Assessor, the candidate's Instructor and an expert from the private sector. • The project brief will consist of integrated task requirements to enable the candidate to supply sufficient evidence of their competence in the skills required to work as a Plumber (Assistant) on solar PV systems • The project brief must be suitable for the level of knowledge and skills required (i.e. Level 2) • The timeframe for completion of assigned project brief is 5 working days • The candidate may work in a team or as an individual to complete the project brief. If in a team, the contribution of each candidate must be clearly defined and observable.

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES/NO	ASSESSOR COMMENTS ON CANDIDATE PERFORMANCE	
1. Completes all course assignments	<ul style="list-style-type: none"> • All completed formative assessments including: <ul style="list-style-type: none"> ○ Observations ○ Demonstrations ○ Questions and recorded answers • All completed course assignments and projects including: <ul style="list-style-type: none"> ○ Drawings and sketches of plumbing layouts ○ Calculations of materials, labour costs and overall costs • Completed work forms/records • Completed job cards • Evidence of development of business plan which includes: <ul style="list-style-type: none"> ○ Financial plan ○ Service and product delivery ○ Marketing strategy 			
	2. Complete project brief of applying Plumber (Assistant) skills on solar photovoltaic (PV) systems under observation by Instructor	Completed requirements of supplied project brief under the following conditions:		
		<ul style="list-style-type: none"> • In a group or individually, as required by project brief 		
		<ul style="list-style-type: none"> • Supplied brief will require a 5 day period to complete in a workshop environment 		
		<ul style="list-style-type: none"> • Demonstrating task skills, task management (integration of tasks), managing any contingencies which may arise and task outcomes throughout the project timeframe 		
	3. Present completed project brief to Assessment Panel	<ul style="list-style-type: none"> • Applying knowledge and skill in the working environment 		
		Oral presentation of project brief and completed project work to Assessment Panel.		
		Presentation to include:		
<ul style="list-style-type: none"> • Requirements of brief • Planning and preparation of project • Problems encountered and how they were dealt with 				
<ul style="list-style-type: none"> • Project outcome/s • Lesson learnt (reflective thinking) 				

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES/NO		ASSESSOR COMMENTS ON CANDIDATE PERFORMANCE
	Presentation to take no longer than 10 minutes			
4. Answer all questions Assessment Panel will have following project presentation	<p>Candidate confidently answered questions correctly and demonstrated understanding of the topics and their application.</p> <p>Assessment Panel to document all questions asked, if any, and the answers here. Use extra pages as required and attach here. </p>			

4

LIST OF TOOLS, EQUIPMENT, MATERIAL AND CONTEXT OF ASSESSMENT

instructions

This section contains information regarding;

- Context of the assessment
- List of required tools and equipment.
- List of consumable items required during the service

1. Context of Assessment

This practical final project will be conducted in a Plumber's lab/workshop environment.

Required tools, equipment and consumables will vary according to project brief.



ASSESSMENT MATERIAL EVIDENCE GUIDE	<h1>LEN0112A.v1 Maintain workplace safety</h1>
Qualification LEN0112.v1 Level: 2 Credit: 2 Version: 1	

CONTENTS	1. Assessment Summary and Record 2. Candidate Assessment 3. Assessor Judgement Guide 4. List of required tools/ equipment, material and context of assessment
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1

ASSESSMENT SUMMARY & RECORD

CANDIDATE NAME:

FATHER NAME:

ACTIVITY	WRITTEN	METHOD			DESIRED OUTCOMES	RESULT	
		ORAL	OBSERVATION	PORTFOLIOS		COMPETENT	NOT YET COMPETENT
NATURE OF ACTIVITY	WRITTEN	ORAL	OBSERVATION	PORTFOLIOS	DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF COMPETENCY STANDARD: MAINTAIN WORKPLACE SAFETY	COMPETENT	NOT YET COMPETENT
Knowledge Assessment	✓				Answer all questions in the knowledge assessment on the following topics: <ul style="list-style-type: none"> • Follow safe work procedures • Apply tools & equipment safety measures • Follow workplace emergency procedures 		
Other Requirements	✓	✓	✓	✓	<ul style="list-style-type: none"> • All candidate formative assessments completed by Instructor including: <ul style="list-style-type: none"> • Observations • Demonstrations • Questions and recorded answers • Any work completed as module assignments • Completed learner logbooks 		

2

CANDIDATE ASSESSMENT

Candidate Name:

Father Name:

ALL WORK ASSESSED IN THIS COMPETENCY STANDARD MUST BE YOUR OWN WORK.

GUIDANCE TO CANDIDATE

To meet this standard you are required to complete the following knowledge assessment within 1 hour timeframe on the following topics:

- Follow safe work procedures
- Apply tools & equipment safety measures
- Follow workplace emergency procedures

ACTIVITIES	CANDIDATE RESPONSE
1. Complete knowledge assessment	<p>Answer all questions in the knowledge assessment on the following topics:</p> <ul style="list-style-type: none">• Following safe work procedures when working with electricity<ul style="list-style-type: none">✓ Organizing and arranging duties, tools, equipment materials and work area✓ Using and storing PPE✓ Performing tasks in a safe manner• Applying tools & equipment safety measures when working with electricity<ul style="list-style-type: none">✓ Checking earthing for safety of equipment✓ Storing tooling and equipment securely• Following workplace emergency procedures for electrical accident or injury<ul style="list-style-type: none">✓ Following safe workplace procedures for dealing with accidents, fires and emergencies within scope of responsibility
2. Other requirements	<ul style="list-style-type: none">• All candidate formative assessments completed by Instructor including:<ul style="list-style-type: none">• Observations• Demonstrations• Questions and recorded answers• Any work completed as module assignments• Completed learner logbooks

3

ASSESSOR JUDGEMENT GUIDE

Candidate Name:

Father Name:

INSTRUCTIONS FOR ASSESSOR

THIS SECTION CONTAINS MINIMUM EVIDENCE REQUIREMENTS.

Oral questioning may be used to clarify candidate understanding of the topic and its application.

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES/NO		ASSESSOR COMMENTS
1. Knowledge assessment	Candidate correctly answered all questions in the knowledge assessment on the following topics:			
	<ul style="list-style-type: none"> • Following safe work procedures when working with electricity <ul style="list-style-type: none"> ○ Organizing and arranging duties, tools, equipment materials and work area ○ Using and storing PPE ○ Performing tasks in a safe manner 			
	<ul style="list-style-type: none"> • Applying tools & equipment safety measures when working with electricity <ul style="list-style-type: none"> ○ Checking earthing for safety of equipment ○ Storing tooling and equipment securely 			
	<ul style="list-style-type: none"> • Following workplace emergency procedures for electrical accident or injury <ul style="list-style-type: none"> ○ Following safe workplace procedures for dealing with accidents, fires and emergencies within scope of responsibility 			
2. Other requirements	<ul style="list-style-type: none"> • All candidate formative assessments completed by Instructor including; <ul style="list-style-type: none"> • Observations • Demonstrations • Questions and recorded answers • Any work completed as module assignments and projects • Completed learner logbooks 			

4

LIST OF MATERIAL AND CONTEXT OF ASSESSMENT

Instructions	This section contains information regarding; <ul style="list-style-type: none"> • Context of the assessment • List of consumable items required during the service
1. Context of Assessment	This knowledge assessment will be conducted in classroom /workshop environment

2. List of consumable items required		
S. No	Consumable Items	Quantity
1	Pen	1 per candidate
2	Knowledge assessment including space for answers	1 per candidate



ASSESSMENT MATERIAL EVIDENCE GUIDE	<h2>LEN0112B.v1 Apply continuing professional development</h2>
Qualification LEN0112.v1 Level: 2 Credit: 2 Version: 1	

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1

ASSESSMENT SUMMARY & RECORD

CANDIDATE NAME:

FATHER NAME:

ACTIVITY	WRITTEN	METHOD			DESIRED OUTCOMES	RESULT	
		ORAL	OBSERVATION	PORTFOLIOS		COMPETENT	NOT YET COMPETENT
NATURE OF ACTIVITY	WRITTEN	ORAL	OBSERVATION	PORTFOLIOS	DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF COMPETENCY STANDARD: APPLY CONTINUING PROFESSIONAL DEVELOPMENT	COMPETENT	NOT YET COMPETENT
Knowledge Assessment	✓				<ul style="list-style-type: none"> Answer all questions in the knowledge assessment on the following topics: <ul style="list-style-type: none"> Identify professional development needs Develop professional knowledge, skills and attitudes Maintain professional proficiency 		
Other Requirements	✓	✓	✓	✓	<ul style="list-style-type: none"> All candidate formative assessments completed by Instructor including: <ul style="list-style-type: none"> Observations Demonstrations Questions and recorded answers All work completed as module assignments and projects Completed learner logbooks Evidence of participating in training programmes Documented training outcomes such as reports, plans and portfolio writing 		

2

CANDIDATE ASSESSMENT

Candidate Name:

Father Name:

ALL WORK ASSESSED IN THIS COMPETENCY STANDARD MUST BE YOUR OWN WORK.

GUIDANCE TO CANDIDATE

To meet this standard you are required to complete the following knowledge assessment within 1 hour timeframe on the following topics:

- Identify professional development needs
- Develop professional knowledge, skills and attitudes
- Maintain professional proficiency

ACTIVITIES	CANDIDATE RESPONSE
1. Complete knowledge assessment	<ul style="list-style-type: none"> ● Answer all questions in the knowledge assessment on the following topics: <ul style="list-style-type: none"> ○ Identify professional development needs ○ Develop professional knowledge, skills and attitudes ○ Maintain professional proficiency
2. Other requirements	<ul style="list-style-type: none"> ● All candidate formative assessments completed by Instructor including; <ul style="list-style-type: none"> ○ Observations ○ Demonstrations ○ Questions and recorded answers ● All work completed as module assignments and projects ● Completed learner logbooks ● Evidence of participating in training programmes ● Documented training outcomes such as reports, plans and portfolio writing

3

ASSESSOR JUDGEMENT GUIDE

Candidate Name:

Father Name:

INSTRUCTIONS FOR ASSESSOR

THIS SECTION CONTAINS MINIMUM EVIDENCE REQUIREMENTS.

Oral questioning may be used to clarify candidate understanding of the topic and its application.

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES/NO		ASSESSOR COMMENTS
1. Knowledge assessment	Candidate's answers to questions are correct and demonstrate understanding of the topics and their application: <ul style="list-style-type: none"> • Identify professional development needs <ul style="list-style-type: none"> ○ Professional development needs ○ Identifying professional development programmes • Develop professional knowledge, skills and attitudes <ul style="list-style-type: none"> ○ Participating in training programmes ○ Documenting training outcome • Maintain professional proficiency <ul style="list-style-type: none"> ○ Identifying and using self-study sources ○ Implementing self-study plan 			
2. Other requirements	<ul style="list-style-type: none"> • Candidate provided all candidate formative assessments completed by Instructor including; <ul style="list-style-type: none"> ○ Observations ○ Demonstrations ○ Questions and recorded answers • All work completed as module assignments and projects • Completed learner logbooks • Evidence of participating in training programmes • Documented training outcomes such as reports, plans and portfolio writing 			

4

LIST OF MATERIAL AND CONTEXT OF ASSESSMENT

Instructions	<p>This section contains information regarding;</p> <ul style="list-style-type: none"> • Context of the assessment • List of consumable items required during the service
1. Context of Assessment	This knowledge assessment will be conducted in classroom environment

2. List of consumable items required		
S. No	Consumable Items	Quantity
1	Pen	1 per candidate
2	Knowledge assessment including space for answers	1 per candidate

1

ASSESSMENT SUMMARY & RECORD

CANDIDATE NAME:

FATHER NAME:

ACTIVITY	WRITTEN	METHOD			DESIRED OUTCOMES	RESULT	
		ORAL	OBSERVATION	PORTFOLIOS		COMPETENT	NOT YET COMPETENT
NATURE OF ACTIVITY	WRITTEN	ORAL	OBSERVATION	PORTFOLIOS	DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF COMPETENCY STANDARD: PERFORM PREVENTIVE MAINTENANCE AS PART OF PLUMBING OPERATIONS	COMPETENT	NOT YET COMPETENT
Practical skill demonstration			✓		<ul style="list-style-type: none"> Plan and prepare for preventive maintenance Perform routine inspection Carry out preventive maintenance Complete work 		
Knowledge Assessment		✓			<ul style="list-style-type: none"> Answer any questions your assessor may have for you during the practical skill demonstration 		
Other Requirements	✓	✓	✓	✓	<ul style="list-style-type: none"> All candidate formative assessments completed by Instructor including; <ul style="list-style-type: none"> Observations Demonstrations Questions and recorded answers All work produced as module projects and assignments Completed learner logbooks Completed work records 		

2

CANDIDATE ASSESSMENT

Candidate Name:

Father Name:

ALL WORK ASSESSED IN THIS COMPETENCY STANDARD MUST BE YOUR OWN WORK.

GUIDANCE TO CANDIDATE

To meet this standard you are required to complete the following practical tasks within set timeframe on the following topics:

- Plan and prepare for preventive maintenance
- Perform troubleshooting
- Carry out preventive maintenance
- Complete work

ACTIVITIES	CANDIDATE RESPONSE
<p>1. Complete practical assessment</p>	<p>During a practical assessment, under observation by an assessor, I will correctly:</p> <ul style="list-style-type: none"> • Plan and prepare for preventive maintenance on supplied solar water heating system, including: <ul style="list-style-type: none"> ○ Identify and obtain safety and other regulatory requirements for maintenance ○ Interpret layout diagrams ○ Identification and selection of tools and equipment • Perform routine inspection of supplied solar water heating system, including: <ul style="list-style-type: none"> ○ Checks for safety hazards ○ Carrying out procedures for routine checks ○ Documenting inspection results • Carry out preventive maintenance on supplied solar water heating system, including: <ul style="list-style-type: none"> ○ Performing basic measurements tests ○ Performing minor adjustments and calibrations ○ Replacing worn out or damaged parts • Complete work by: <ul style="list-style-type: none"> ○ Complete work related documents and procedures ○ Perform final quality inspection ○ Cleaning up and storing tools, equipment and material • Meet set timeframe appropriate for supplied solar water heating system requiring preventive maintenance
<p>2. Complete knowledge assessment</p>	<p>My answers to questions are correct and demonstrate my understanding of the topics and their application:</p>
<p>3. Other requirements</p>	<ul style="list-style-type: none"> • All candidate formative assessments completed by Instructor including: <ul style="list-style-type: none"> ○ Observations ○ Demonstrations ○ Questions and recorded answers • All work produced as module projects and assignments • Completed learner logbooks • Completed work records

3

ASSESSOR JUDGEMENT GUIDE

Candidate Name:

Father Name:

INSTRUCTIONS FOR ASSESSOR

THIS SECTION CONTAINS MINIMUM EVIDENCE REQUIREMENTS.

The supplied plumbing appliance requiring preventive maintenance must meet the evidence requirements of the candidate's competence in performing preventive maintenance on solar water heating system as part of plumbing operations.

Set timeframe for practical skill demonstration must reflect the commercially viable timeframe for the tasks.

Oral questioning may be used to clarify candidate understanding of the topic and its application.

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES/NO	ASSESSOR COMMENTS
1. Completed practical assessment	During a practical assessment, under observation by an assessor, the candidate correctly carried out:		
	<ul style="list-style-type: none"> • Planning and preparing for preventive maintenance on supplied solar water heating system, including: <ul style="list-style-type: none"> ○ Identifying and obtaining safety and other regulatory requirements for maintenance ○ Interpretation of circuit diagrams ○ Identification and selection of tools and equipment 		
	<ul style="list-style-type: none"> • Performing routine inspection of supplied solar water heating system, including: <ul style="list-style-type: none"> ○ Checks for safety hazards ○ Carrying out procedures for routine checks ○ Documenting inspection results 		
	<ul style="list-style-type: none"> • Carrying out preventive maintenance on supplied solar water heating system, including: <ul style="list-style-type: none"> ○ Performing basic measurements tests ○ Performing minor adjustments and calibrations ○ Replacing worn out or damaged parts 		
	<ul style="list-style-type: none"> • Completing work by: <ul style="list-style-type: none"> ○ Complete work related documents and procedures ○ Perform final quality inspection ○ Cleaning up and storing tools, equipment and material 		
	<ul style="list-style-type: none"> • Meeting set timeframe appropriate for supplied solar water heating system requiring preventive maintenance 		
	2. Knowledge assessment	<p>Candidate's answers to questions are correct and demonstrate understanding of the topics and their application.</p> <p><i>Assessor to document below all questions asked and candidate answers. Use extra sheets if required and attached here.</i></p>	
3. Other requirements	<ul style="list-style-type: none"> • All candidate formative assessments completed by Instructor including: <ul style="list-style-type: none"> ○ Observations ○ Demonstrations ○ Questions and recorded answers • All work produced as module projects and assignments • Completed logbooks • Completed work records 		

4

LIST OF TOOLS, EQUIPMENT, MATERIAL AND CONTEXT OF ASSESSMENT

Instructions	<p>This section contains information regarding;</p> <ul style="list-style-type: none"> Context of the assessment List of required tools and equipment. List of consumable appliances required during the service
1. Context of Assessment	<p>This practical skill demonstration will be conducted in a Plumber's lab/workshop environment</p> <p>The Assessor will select the required tools, equipment and consumables from the list below for the assessment</p>

2. List of tools and equipment required		
S. No	Tools and equipment	Quantity
1	Adjustable wrench 6",8",12"	
2	Pipe Bender Machine Hydraulic complete set	
3	Chisel set	
4	Trowel	
5	Electric Drill machine(hammering with healti)3/4"	
6	Die (Ratchet),Die Fix 1/2,3/4,1,2	
7	Extension board 10 meter 2 core	
8	First Aid box	
9	Gloves lather, rubber	
10	Safety goggles Plastic, glass	
11	Hand Electric Grinder Electric Wall Cutter	
12	Grip plier 10"	
13	Hammer 250gm,500gm,1000gm,1500gm,2000gm	
14	Hand bit 1/4" , 3/8"	
15	Helmet ABS Material	
16	Hacksaw 12" with blade	
17	Spirit Level 6",12",8"	
18	L-key set Star L key Set	
19	Measuring tape 3meter ,10 meter	
20	Pipe wrench ,10",12",14",18"	
21	Plass (pipe cutter) 1/2", 2"	
22	PPRC Heater 750W to 1000W	
23	PPR/Gi cutter 10" Gi Pipe Cutter 1/2 to 2"	
24	Safety boots(Shoes)	
25	Screw driver set 6",8",10",12"	
26	Spanner set 6mm to 24mm	
27	Testing pump (leakage) (Hand type)	
28	Tools box iron+3 draws	
29	Torch Chargeable	
30	Vice with iron stand(2nos)	
31	Compass Spring type 8"	
32	Solar Water Heater (Complete Set) Different denominations of different types	
33	Water Filling Pumps Centrifugal pump 1/2" Receprocating 1/2	
34	Pipe Insulation Material	
35	Sealing Tapes	
36	Bench Vice 5" with bench	
37	Oil Can	

38	Center Punch	
39	Wire Brush	
40	Pipe Reemar	
41	Tap Set 1/8",1/4",3/8",1/2",3/4",1" with handle	
42	Air Compressor 10 bar	
43	Tri square 6",8"	

3. List of consumable items required		
S. No	Consumable items	Quantity
1	Gi Pipe 1/2",3/4",1"	
2	Gi fitting 1/2",3/4",1" (Elbow, tee,socket etc)	
3	PPRC pipe 25mm,32mm	
4	PPRC fitting 25mm,32mm	
5	PVC pipe 2",3",4"	
6	U PVC 2",3",4"	
7	P trap 4"	
8	Solution PVC	
9	All types of valves 1/2",3/4",1"	
10	Plastic Pipe 1/2",3/4",1"	
11	Cp Fitting	



ASSESSMENT MATERIAL EVIDENCE GUIDE	<h1>LEN0142D.v1 Perform corrective maintenance as part of plumbing operations</h1>
Qualification LEN0142.v1 Level: 2 Credit: 13 Version: 1	

CONTENTS	<ol style="list-style-type: none"> 1. Assessment Summary and Record 2. Candidate Assessment 3. Assessor Judgement Guide 4. List of required tools/ equipment, material and context of assessment
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ASSESSMENT AND ASSESSOR DETAILS	Competent <input type="checkbox"/> Not Yet Competent <input type="checkbox"/>																		
	Assessment <input type="checkbox"/> Re-Assessment <input type="checkbox"/>																		
	Assessor Name: Assessor Code Assessor Signature Date <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> <tr> <td style="text-align: center; font-size: 8px;">DD</td> <td style="text-align: center; font-size: 8px;">MM</td> <td colspan="6"></td> <td style="text-align: center; font-size: 8px;">YYYY</td> </tr> </table>											DD	MM						
DD	MM							YYYY											

CANDIDATE DETAILS	Candidate Name: <small style="display: flex; justify-content: space-between; width: 100%;"> First Name Last Name </small>																				
	Father Name																				
	Institute Name and District																				
	CNIC/BFORM # <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table>																				
	OR																				
Registration Number:																					
Gender Male <input type="checkbox"/> Female <input type="checkbox"/>																					
Candidate Consent I agree to the time and date of the assessment and am aware of the requirements of the assessment. I fully understand my rights of appeal.																					
Candidate Signature:																					

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1

ASSESSMENT SUMMARY & RECORD

CANDIDATE NAME:

FATHER NAME:

ACTIVITY	METHOD				DESIRED OUTCOMES	RESULT	
	WRITTEN	ORAL	OBSERVATION	PORTFOLIOS		COMPETENT	NOT YET COMPETENT
NATURE OF ACTIVITY					DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF COMPETENCY STANDARD: PERFORM CORRECTIVE MAINTENANCE AS PART OF PLUMBING OPERATIONS		
Practical skill demonstration			✓		<ul style="list-style-type: none"> Plan and prepare for corrective maintenance Perform troubleshooting Carry out corrective maintenance Complete work 		
Knowledge Assessment		✓			<ul style="list-style-type: none"> Answer any questions your assessor may have for you during the practical skill demonstration 		
Other Requirements	✓	✓	✓	✓	<ul style="list-style-type: none"> All candidate formative assessments completed by Instructor including; <ul style="list-style-type: none"> Observations Demonstrations Questions and recorded answers All work produced as module projects and assignments Completed learner logbooks Completed work records 		

2

CANDIDATE ASSESSMENT

Candidate Name:

Father Name:

ALL WORK ASSESSED IN THIS COMPETENCY STANDARD MUST BE YOUR OWN WORK.

GUIDANCE TO CANDIDATE

To meet this standard you are required to complete the following practical tasks within set timeframe on the following topics:

- Plan and prepare for corrective maintenance
- Perform troubleshooting
- Carry out corrective maintenance
- Complete work

ACTIVITIES	CANDIDATE RESPONSE
<p>1. Complete practical skill demonstration</p>	<p>During a practical assessment, under observation by an assessor, I will correctly carry out:</p> <p>Planning and preparing for corrective maintenance on supplied solar water heating system, including:</p> <ul style="list-style-type: none"> ○ Identifying and obtaining safety and other regulatory requirements for maintenance ○ Interpretation of diagrams ○ Identification and selection of tools and equipment <p>Performing routine inspection of supplied solar water heating system, including:</p> <ul style="list-style-type: none"> ○ Checks for safety hazards ○ Carrying out diagnostic procedures ○ Identify faulty parts and/or equipment and analyse system fault <p>Carrying out corrective maintenance on supplied solar water heating system, including:</p> <ul style="list-style-type: none"> ○ Dismantle faulty parts or components ○ Replacing or repairing faulty or damaged parts ○ Perform commissioning <p>Completing work by:</p> <ul style="list-style-type: none"> ○ Complete work related documents and procedures ○ Perform final quality inspection ○ Cleaning up and storing tools, equipment and material <p>Meeting set timeframe appropriate for supplied solar water heating system requiring corrective maintenance</p>
<p>2. Complete knowledge assessment</p>	<p>My answers to questions are correct and demonstrate my understanding of the topics and their application:</p>
<p>3. Other requirements</p>	<ul style="list-style-type: none"> • All candidate formative assessments completed by Instructor including: <ul style="list-style-type: none"> ○ Observations ○ Demonstrations ○ Questions and recorded answers • All work produced as module projects and assignments • Completed learner logbooks • Completed work records

3

ASSESSOR JUDGEMENT GUIDE

Candidate Name:

Father Name:

INSTRUCTIONS FOR ASSESSOR

THIS SECTION CONTAINS MINIMUM EVIDENCE REQUIREMENTS.

The supplied plumbing appliance requiring corrective maintenance must meet the evidence requirements of the candidate's competence in performing corrective maintenance of solar water heating system as part of plumbing operations.

Set timeframe for practical skill demonstration must reflect the commercially viable timeframes for the tasks.

Oral questioning may be used to clarify candidate understanding of the topic and its application.

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES/NO	ASSESSOR COMMENTS
1. Completed practical skill demonstration	During a practical assessment, under observation by an assessor, the candidate correctly carried out:		
	Planning and preparing for corrective maintenance on supplied solar water heating system, including:		
	<ul style="list-style-type: none"> Identify and obtain safety and other regulatory requirements for maintenance 		
	<ul style="list-style-type: none"> Interpret diagrams 		
	<ul style="list-style-type: none"> Identify and select tools and equipment 		
	Performing routine inspection of supplied solar water heating system, including:		
	<ul style="list-style-type: none"> Checks for safety hazards 		
	<ul style="list-style-type: none"> Carrying out diagnostic procedures 		
	<ul style="list-style-type: none"> Identify faulty parts and/or equipment and analyse system fault 		
	Carrying out corrective maintenance on supplied solar water heating system, including:		
	<ul style="list-style-type: none"> Dismantle faulty parts or components 		
	<ul style="list-style-type: none"> Replace or repair faulty or damaged parts 		
	<ul style="list-style-type: none"> Perform commissioning 		
	Completing work by:		
<ul style="list-style-type: none"> Complete work related documents and procedures 			
<ul style="list-style-type: none"> Perform final quality inspection 			
<ul style="list-style-type: none"> Clean up and store tools, equipment and material 			
	Meeting set timeframe appropriate for supplied solar water heating system requiring corrective maintenance		
2. Knowledge assessment	<p>Candidate's answers to questions are correct and demonstrate understanding of the topics and their application.</p> <p><i>Assessor to document below all questions asked and candidate answers. Use extra sheets if required and attached.</i></p>		
3. Other requirements	<ul style="list-style-type: none"> All candidate formative assessments completed by Instructor including; <ul style="list-style-type: none"> Observations Demonstrations Questions and recorded answers All work produced as module projects and assignments Completed learner logbooks Completed work records 		

4

LIST OF TOOLS, EQUIPMENT, MATERIAL AND CONTEXT OF ASSESSMENT

Instructions	<p>This section contains information regarding;</p> <ul style="list-style-type: none"> • Context of the assessment • List of required tools and equipment. • List of consumable items required during the service
1. Context of Assessment	<p>This practical skill demonstration will be conducted in a Plumber's lab/workshop environment</p> <p>The Assessor will select the required tools, equipment and consumables from the list below for the assessment</p>

2. List of tools and equipment required		
S. No	Tools and equipment	Quantity
1	Adjustable wrench 6",8",12"	
2	Pipe Bender Machine Hydraulic complete set	
3	Chisel set	
4	Trowel	
5	Electric Drill machine(hammering with healti)3/4"	
6	Die (Ratchet),Die Fix 1/2,3/4,1,2	
7	Extension board 10 meter 2 core	
8	First Aid box	
9	Gloves lather, rubber	
10	Safety goggles Plastic, glass	
11	Hand Electric Grinder Electric Wall Cutter	
12	Grip plier 10"	
13	Hammer 250gm,500gm,1000gm,1500gm,2000gm	
14	Hand bit 1/4" , 3/8"	
15	Helmet ABS Material	
16	Hacksaw 12" with blade	
17	Spirit Level 6",12",8"	
18	L-key set Star L key Set	
19	Measuring tape 3meter ,10 meter	
20	Pipe wrench ,10",12",14",18"	
21	Plass (pipe cutter) 1/2", 2"	
22	PPRC Heater 750W to 1000W	
23	PPR/Gi cutter 10" Gi Pipe Cutter 1/2 to 2"	
24	Safety boots(Shoes)	
25	Screw driver set 6",8",10",12"	
26	Spanner set 6mm to 24mm	
27	Testing pump (leakage) (Hand type)	
28	Tools box iron+3 draws	
29	Torch Chargeable	
30	Vice with iron stand(2nos)	
31	Compass Spring type 8"	
32	Solar Water Heater (Complete Set) Different denominations of different types	
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34	Pipe Insulation Material	
35	Sealing Tapes	
36	Bench Vice 5" with bench	
37	Oil Can	

38	Center Punch	
39	Wire Brush	
40	Pipe Reemar	
41	Tap Set 1/8",1/4",3/8",1/2",3/4",1" with handle	
42	Air Compressor 10 bar	
43	Tri square 6",8"	

3. List of consumable items required		
S. No	Consumable items	Quantity
1	Gi Pipe 1/2",3/4",1"	
2	Gi fitting 1/2",3/4",1" (Elbow, tee,socket etc)	
3	PPRC pipe 25mm,32mm	
4	PPRC fitting 25mm,32mm	
5	PVC pipe 2",3",4"	
6	U PVC 2",3",4"	
7	P trap 4"	
8	Solution PVC	
9	All types of valves 1/2",3/4",1"	
10	Plastic Pipe 1/2",3/4",1"	
11	Cp Fitting	



ASSESSMENT MATERIAL EVIDENCE GUIDE	<h1>LEN0142E.v1 Perform layout and excavation</h1>
Qualification LEN0142.v1 Level: 2 Credit: 8 Version: 1	

CONTENTS	1. Assessment Summary and Record 2. Candidate Assessment 3. Assessor Judgement Guide 4. List of required tools/ equipment, material and context of assessment
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ASSESSMENT AND ASSESSOR DETAILS	Competent <input type="checkbox"/> Not Yet Competent <input type="checkbox"/>																
	Assessment <input type="checkbox"/> Re-Assessment <input type="checkbox"/>																
	Assessor Name: Assessor Code																
	Assessor Signature Date <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> <tr> <td style="text-align: center; font-size: 8px;">DD</td> <td style="text-align: center; font-size: 8px;">MM</td> <td colspan="4"></td> <td style="text-align: center; font-size: 8px;">YYYY</td> </tr> </table>											DD	MM				
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Candidate Signature:																					

ASSESSMENT RESULTS SUMMARY FORM	You can use this coversheet as an <i>Assessment Results Summary Form</i> . Simply post a photocopy of this completed coversheet to NAVTTIC
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1

ASSESSMENT SUMMARY & RECORD

CANDIDATE NAME:

FATHER NAME:

ACTIVITY	WRITTEN	METHOD			DESIRED OUTCOMES	RESULT	
		ORAL	OBSERVATION	PORTFOLIOS		COMPETENT	NOT YET COMPETENT
NATURE OF ACTIVITY	WRITTEN	ORAL	OBSERVATION	PORTFOLIOS	DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF COMPETENCY STANDARD: PERFORM LAYOUT AND EXCAVATION	COMPETENT	NOT YET COMPETENT
Practical skill demonstration			✓		<ul style="list-style-type: none"> Plan and prepare for work Excavate according to plan Complete work 		
Knowledge Assessment		✓			<ul style="list-style-type: none"> Answer any questions your assessor may have for you during the practical skill demonstration 		
Other Requirements	✓	✓	✓	✓	<ul style="list-style-type: none"> All candidate formative assessments completed by Instructor including; <ul style="list-style-type: none"> Observations Demonstrations Questions and recorded answers All work produced as module projects and assignments Completed learner logbooks Completed work records 		

2

CANDIDATE ASSESSMENT

Candidate Name:

Father Name:

ALL WORK ASSESSED IN THIS COMPETENCY STANDARD MUST BE YOUR OWN WORK.

GUIDANCE TO CANDIDATE

To meet this standard you are required to complete the following practical tasks within set timeframe on the following topics:

- Plan and prepare for work
- Excavate according to plan
- Complete work

ACTIVITIES	CANDIDATE RESPONSE
<p>1. Complete practical assessment of performing layout and excavation under observation by an assessor</p>	<p>During a practical assessment, under observation by an assessor, I will correctly:</p> <ul style="list-style-type: none"> • Plan and prepare for work including: <ul style="list-style-type: none"> ○ Identify and obtain safety and other regulatory requirements for maintenance ○ Interpret and confirm layout plan ○ Identify and select tools and equipment • Excavate according to plan, including: <ul style="list-style-type: none"> ○ Check for safety hazards ○ Perform excavation ○ Install trench support • Complete work by: <ul style="list-style-type: none"> ○ Complete work related documents and procedures ○ Perform final quality inspection ○ Clean up and store tools, equipment and material • Meeting set timeframe appropriate for supplied plumbing system requiring layout and excavation
<p>2. Complete knowledge assessment</p>	<p>My answers to questions are correct and demonstrate my understanding of the topics and their application:</p>
<p>3. Other requirements</p>	<ul style="list-style-type: none"> • All candidate formative assessments completed by Instructor including: <ul style="list-style-type: none"> ○ Observations ○ Demonstrations ○ Questions and recorded answers • All work produced as module projects and assignments • Completed learner logbooks • Completed work records

3

ASSESSOR JUDGEMENT GUIDE

Candidate Name:

Father Name:

INSTRUCTIONS FOR ASSESSOR

THIS SECTION CONTAINS MINIMUM EVIDENCE REQUIREMENTS.

The supplied solar heating system requiring layout and excavation must meet the evidence requirements of the candidate's competence in performing layout and excavation tasks.

Set timeframe for practical skill demonstration must reflect the commercially viable timeframe for the tasks.

Oral questioning may be used to clarify candidate understanding of the topic and its application.

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES/NO	ASSESSOR COMMENTS
1. Complete practical assessment of performing layout and excavation under observation by an assessor	During a practical assessment, under observation by an assessor, the candidate correctly carried out:		
	• Planning and preparing for work including:		
	○ Identify and obtain safety and other regulatory requirements for maintenance		
	○ Interpret and confirm layout plan		
	○ Identify and select tools and equipment		
	• Excavating according to plan, including:		
	○ Check for safety hazards		
	○ Perform excavation		
	○ Install trench support		
	• Completing work by:		
	○ Complete work related documents and procedures		
	○ Perform final quality inspection		
○ Clean up and store tools, equipment and material			
• Meeting set timeframe appropriate for supplied plumbing system requiring layout and excavation			
2. Knowledge assessment	<p>Candidate's answers to questions are correct and demonstrate understanding of the topics and their application.</p> <p><i>Assessor to document below all questions asked and candidate answers. Use extra sheets if required and attached here.</i></p>		
3. Other requirements	<ul style="list-style-type: none"> • All candidate formative assessments completed by Instructor including: <ul style="list-style-type: none"> ○ Observations ○ Demonstrations ○ Questions and recorded answers • All work produced as module projects and assignments • Completed logbooks • Completed work records 		

4

LIST OF TOOLS, EQUIPMENT, MATERIAL AND CONTEXT OF ASSESSMENT

instructions	<p>This section contains information regarding;</p> <ul style="list-style-type: none"> Context of the assessment List of required tools and equipment. List of consumable appliances required during the service
1. Context of Assessment	<p>This practical skill demonstration will be conducted in a Plumber's lab/workshop environment</p> <p>The Assessor will select the required tools, equipment and consumables from the list below for the assessment</p>

2. List of tools and equipment required		
S. No	Tools and equipment	Quantity
1	Adjustable wrench 6",8",12"	
2	Pipe Bender Machine Hydraulic complete set	
3	Chisel set	
4	Trowel	
5	Electric Drill machine(hammering with healti)3/4"	
6	Die (Ratchet),Die Fix 1/2,3/4,1,2	
7	Extension board 10 meter 2 core	
8	First Aid box	
9	Gloves lather,rubber	
10	Safety goggles Plastic,glass	
11	Hand Electric Grinder Electric Wall Cutter	
12	Grip plier 10"	
13	Hammer 250gm,500gm,1000gm,1500gm,2000gm	
14	Hand bit 1/4" , 3/8"	
15	Helmet ABS Material	
16	Hacksaw 12" with blade	
17	Spirit Level 6",12",8"	
18	L-key set Star L key Set	
19	Measuring tape 3meter ,10 meter	
20	Pipe wrench ,10",12",14",18"	
21	Plass (pipe cutter) 1/2", 2"	
22	PPRC Heater 750W to 1000W	
23	PPR/Gi cutter 10" Gi Pipe Cutter 1/2 to 2"	
24	Safety boots(Shoes)	
25	Screw driver set 6",8",10",12"	
26	Spanner set 6mm to 24mm	
27	Testing pump (leakage) (Hand type)	
28	Tools box iron+3 draws	
29	Torch Chargeable	
30	Vice with iron stand(2nos)	
31	Compass Spring type 8"	
32	Solar Water Heater (Complete Set) Different denominations of different types	
33	Water Filling Pumps Centrifugal pump 1/2" Reciprocating 1/2	
34	Pipe Insulation Material	
35	Sealing Tapes	
36	Bench Vice 5" with bench	
37	Oil Can	
38	Center Punch	

39	Wire Brush	
40	Pipe Reemar	
41	Tap Set 1/8", 1/4", 3/8", 1/2", 3/4", 1" with handle	
42	Air Compressor 10 bar	
43	Tri square 6", 8"	

3. List of consumable items required		
S. No	Consumable items	Quantity
1	Gi Pipe 1/2", 3/4", 1"	
2	Gi fitting 1/2", 3/4", 1" (Elbow, tee, socket etc.)	
3	PPRC pipe 25mm, 32mm	
4	PPRC fitting 25mm, 32mm	
5	PVC pipe 2", 3", 4"	
6	U PVC 2", 3", 4"	
7	P trap 4"	
8	Solution PVC	
9	All types of valves 1/2", 3/4", 1"	
10	Plastic Pipe 1/2", 3/4", 1"	
11	Cp Fitting	

1

ASSESSMENT SUMMARY & RECORD

CANDIDATE NAME:

FATHER NAME:

ACTIVITY	METHOD				DESIRED OUTCOMES	RESULT	
	WRITTEN	ORAL	OBSERVATION	PORTFOLIOS		COMPETENT	NOT YET COMPETENT
NATURE OF ACTIVITY					DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF COMPETENCY STANDARD: FIX BASIC SANITARY WARE		
Practical skill demonstration			✓		<ul style="list-style-type: none"> Plan and prepare for work Fix basic sanitary ware Complete work 		
Knowledge Assessment		✓			<ul style="list-style-type: none"> Answer any questions your assessor may have for you during the practical skill demonstration 		
Other Requirements	✓	✓	✓	✓	<ul style="list-style-type: none"> All candidate formative assessments completed by Instructor including; <ul style="list-style-type: none"> Observations Demonstrations Questions and recorded answers All work produced as module projects and assignments Completed learner logbooks Completed work records 		

2

CANDIDATE ASSESSMENT

Candidate Name:

Father Name:

ALL WORK ASSESSED IN THIS COMPETENCY STANDARD MUST BE YOUR OWN WORK.

GUIDANCE TO CANDIDATE

To meet this standard you are required to complete the following practical tasks within 2 hours timeframe on the following topics:

- Plan and prepare for work
- Fix basic sanitary ware
- Complete work

ACTIVITIES	CANDIDATE RESPONSE
<p>1. Complete practical assessment of fixing of basic sanitary ware under observation by an Assessor</p>	<p>During a practical assessment, under observation by an assessor, I will correctly:</p> <ul style="list-style-type: none"> • Planning and preparing for work including: <ul style="list-style-type: none"> ○ Identify and obtain safety and other regulatory requirements for maintenance ○ Perform measurements • Fix basic sanitary ware including: <ul style="list-style-type: none"> ○ Check for safety hazards ○ Mark out installation points and fixtures ○ Mount sanitary ware • Completing work by: <ul style="list-style-type: none"> ○ Complete work related documents and procedures ○ Perform final quality inspection ○ Clean up and store tools, equipment and material • Meeting set timeframe appropriate for supplied plumbing system requiring fixing of basic sanitary ware
<p>2. Complete knowledge assessment</p>	<p>My answers to questions are correct and demonstrate my understanding of the topics and their application:</p>
<p>3. Other requirements</p>	<ul style="list-style-type: none"> • All candidate formative assessments completed by Instructor including: <ul style="list-style-type: none"> ○ Observations ○ Demonstrations ○ Questions and recorded answers • All work produced as module projects and assignments • Completed learner logbooks • Completed work records

3

ASSESSOR JUDGEMENT GUIDE

Candidate Name:

Father Name:

INSTRUCTIONS FOR ASSESSOR

THIS SECTION CONTAINS MINIMUM EVIDENCE REQUIREMENTS.

The supplied plumbing system requiring fixing of basic sanitary ware must meet the evidence requirements of the candidate's competence in those tasks.

Set timeframe for practical skill demonstration must reflect the commercially viable timeframe for these tasks.

Oral questioning may be used to clarify candidate understanding of the topic and its application.

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES/NO	ASSESSOR COMMENTS
1. Completed practical assessment of fixing of basic sanitary ware under observation by an Assessor	<p>During a practical assessment, under observation by an assessor, the candidate correctly carried out:</p> <ul style="list-style-type: none"> • Planning and preparing for work including: <ul style="list-style-type: none"> ○ Identify and obtain safety and other regulatory requirements for maintenance ○ Perform measurements • Fix basic sanitary ware, including: <ul style="list-style-type: none"> ○ Check for safety hazards ○ Mark out installation points and fixtures ○ Mount sanitary ware • Completing work by: <ul style="list-style-type: none"> ○ Complete work related documents and procedures ○ Perform final quality inspection ○ Clean up and store tools, equipment and material • Meeting set timeframe appropriate for supplied plumbing system requiring fixing of basic sanitary ware 		
2. Knowledge assessment	<p>Candidate's answers to questions are correct and demonstrate understanding of the topics and their application.</p> <p><i>Assessor to document below all questions asked and candidate answers. Use extra sheets if required and attached here.</i></p>		
3. Other requirements	<ul style="list-style-type: none"> • All candidate formative assessments completed by Instructor including: <ul style="list-style-type: none"> ○ Observations ○ Demonstrations ○ Questions and recorded answers • All work produced as module projects and assignments • Completed logbooks • Completed work records 		

4

LIST OF TOOLS, EQUIPMENT, MATERIAL AND CONTEXT OF ASSESSMENT

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7	Extension board 10 meter 2 core	
8	First Aid box	
9	Gloves lather, rubber	
10	Safety goggles Plastic, glass	
11	Hand Electric Grinder Electric Wall Cutter	
12	Grip plier 10"	
13	Hammer 250gm,500gm,1000gm,1500gm,2000gm	
14	Hand bit 1/4" , 3/8"	
15	Helmet ABS Material	
16	Hacksaw 12" with blade	
17	Spirit Level 6",12",8"	
18	L-key set Star L key Set	
19	Measuring tape meter ,10 meter	
20	Pipe wrench ,10",12",14",18"	
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22	PPRC Heater 750W to 1000W	
23	PPR/Gi cutter 10" Gi Pipe Cutter 1/2 to 2"	
24	Safety boots(Shoes)	
25	Screw driver set 6",8",10",12"	
26	Spanner set 6mm to 24mm	
27	Testing pump (leakage) (Hand type)	
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3. List of consumable items required		
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6	U PVC 2", 3", 4"	
7	P trap 4"	
8	Solution PVC	
9	All types of valves 1/2", 3/4", 1"	
10	Plastic Pipe 1/2", 3/4", 1"	
11	Cp Fitting	



ASSESSMENT MATERIAL EVIDENCE GUIDE	<h1>LEN0142G.v1 Join fittings and pipes</h1>
Qualification LEN0142.v1 Level: 2 Credit: 9 Version: 1	

CONTENTS	1. Assessment Summary and Record 2. Candidate Assessment 3. Assessor Judgement Guide 4. List of required tools/ equipment, material and context of assessment
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	Assessment <input type="checkbox"/> Re-Assessment <input type="checkbox"/>																	
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	OR																				
Registration Number:																					
Gender Male <input type="checkbox"/> Female <input type="checkbox"/>																					
Candidate Consent I agree to the time and date of the assessment and am aware of the requirements of the assessment. I fully understand my rights of appeal.																					
Candidate Signature:																					

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1

ASSESSMENT SUMMARY & RECORD

CANDIDATE NAME:

FATHER NAME:

ACTIVITY	WRITTEN	METHOD			DESIRED OUTCOMES	RESULT	
		ORAL	OBSERVATION	PORTFOLIOS		COMPETENT	NOT YET COMPETENT
NATURE OF ACTIVITY	WRITTEN	ORAL	OBSERVATION	PORTFOLIOS	DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF COMPETENCY STANDARD: JOIN FITTINGS AND PIPES	COMPETENT	NOT YET COMPETENT
Practical skill demonstration			✓		<ul style="list-style-type: none"> Join fittings and pipes 		
Knowledge Assessment		✓			<ul style="list-style-type: none"> Answer any questions your assessor may have for you during the practical skill demonstration 		
Other Requirements	✓	✓	✓	✓	<ul style="list-style-type: none"> All candidate formative assessments completed by Instructor including; <ul style="list-style-type: none"> Observations Demonstrations Questions and recorded answers All work produced as module projects and assignments Completed learner logbooks Completed work records 		

2

CANDIDATE ASSESSMENT

Candidate Name:

Father Name:

ALL WORK ASSESSED IN THIS COMPETENCY STANDARD MUST BE YOUR OWN WORK.

GUIDANCE TO CANDIDATE

To meet this standard you are required to complete the following practical tasks within 1 hour timeframe on the following topics:

- Join fittings and pipes

ACTIVITIES	CANDIDATE RESPONSE
1. Complete practical assessment of joining fittings and pipes under observation by an assessor	During a practical assessment, under observation by an assessor, I will correctly: <ul style="list-style-type: none">• Join fittings and pipes including:<ul style="list-style-type: none">○ Identify and select tools and equipment○ Measure pipes○ Cut pipes to length○ Join pipes and fittings• Meeting set timeframe appropriate for supplied plumbing system requiring joining fittings and pipes
2. Complete knowledge assessment	My answers to questions are correct and demonstrate my understanding of the topics and their application:
3. Other requirements	<ul style="list-style-type: none">• All candidate formative assessments completed by Instructor including:<ul style="list-style-type: none">○ Observations○ Demonstrations○ Questions and recorded answers• All work produced as module projects and assignments• Completed learner logbooks• Completed work records

3

ASSESSOR JUDGEMENT GUIDE

Candidate Name:

Father Name:

INSTRUCTIONS FOR ASSESSOR

THIS SECTION CONTAINS MINIMUM EVIDENCE REQUIREMENTS.

The supplied plumbing system requiring joining of fittings and pipes must meet the evidence requirements of the candidate's competence in performing layout and excavation tasks.

Set timeframe for practical skill demonstration must reflect the commercially viable timeframe for the tasks.

Oral questioning may be used to clarify candidate understanding of the topic and its application.

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES/NO	ASSESSOR COMMENTS
1. Completed practical assessment of joining fittings and pipes under observation by an assessor	<p>During a practical assessment, under observation by an assessor, the candidate correctly carried out:</p> <ul style="list-style-type: none"> • Joining fittings and pipes including: <ul style="list-style-type: none"> ○ Identify and select tools and equipment ○ Measure pipes ○ Cut pipes to length ○ Join pipes and fittings • Meeting set timeframe appropriate for supplied plumbing system requiring layout and excavation 		
2. Knowledge assessment	<p>Candidate's answers to questions are correct and demonstrate understanding of the topics and their application.</p> <p><i>Assessor to document below all questions asked and candidate answers. Use extra sheets if required and attached here.</i></p>		
3. Other requirements	<ul style="list-style-type: none"> • All candidate formative assessments completed by Instructor including: <ul style="list-style-type: none"> ○ Observations ○ Demonstrations ○ Questions and recorded answers • All work produced as module projects and assignments • Completed logbooks • Completed work records 		

4

LIST OF TOOLS, EQUIPMENT, MATERIAL AND CONTEXT OF ASSESSMENT

instructions	<p>This section contains information regarding;</p> <ul style="list-style-type: none"> Context of the assessment List of required tools and equipment. List of consumable items required during the service
1. Context of Assessment	<p>This practical skill demonstration will be conducted in a Plumber's lab/workshop environment</p> <p>The Assessor will select the required tools, equipment and consumables from the list below for the assessment</p>

2. List of tools and equipment required		
S. No	Tools and equipment	Quantity
1	Adjustable wrench 6",8",12"	
2	Pipe Bender Machine Hydraulic complete set	
3	Chisel set	
4	Trowel	
5	Electric Drill machine(hammering with healti)3/4"	
6	Die (Ratchet),Die Fix 1/2,3/4,1,2	
7	Extension board 10 meter 2 core	
8	First Aid box	
9	Gloves lather, rubber	
10	Safety goggles Plastic, glass	
11	Hand Electric Grinder Electric Wall Cutter	
12	Grip plier 10"	
13	Hammer 250gm,500gm,1000gm,1500gm,2000gm	
14	Hand bit 1/4" , 3/8"	
15	Helmet ABS Material	
16	Hacksaw 12" with blade	
17	Spirit Level 6",12",8"	
18	L-key set Star L key Set	
19	Measuring tape meter ,10 meter	
20	Pipe wrench ,10",12",14",18"	
21	Plass (pipe cutter) 1/2", 2"	
22	PPRC Heater 750W to 1000W	
23	PPR/Gi cutter 10" Gi Pipe Cutter 1/2 to 2"	
24	Safety boots(Shoes)	
25	Screw driver set 6",8",10",12"	
26	Spanner set 6mm to 24mm	
27	Testing pump (leakage) (Hand type)	
28	Tools box iron+3 draws	
29	Torch Chargeable	
30	Vice with iron stand(2nos)	
31	Compass Spring type 8"	
32	Solar Water Heater (Complete Set) Different denominations of different types	
33	Water Filling Pumps Centrifugal pump 1/2" Reciprocating 1/2	
34	Pipe Insulation Material	
35	Sealing Tapes	
36	Bench Vice 5" with bench	
37	Oil Can	
38	Center Punch	

39	Wire Brush	
40	Pipe Reemar	
41	Tap Set 1/8", 1/4", 3/8", 1/2", 3/4", 1" with handle	
42	Air Compressor 10 bar	
43	Tri square 6", 8"	

3. List of consumable items required		
S. No	Consumable items	Quantity
1	Gi Pipe 1/2", 3/4", 1"	
2	Gi fitting 1/2", 3/4", 1" (Elbow, tee, socket etc.)	
3	PPRC pipe 25mm, 32mm	
4	PPRC fitting 25mm, 32mm	
5	PVC pipe 2", 3", 4"	
6	U PVC 2", 3", 4"	
7	P trap 4"	
8	Solution PVC	
9	All types of valves 1/2", 3/4", 1"	
10	Plastic Pipe 1/2", 3/4", 1"	
11	Cp Fitting	



ASSESSMENT MATERIAL EVIDENCE GUIDE	<h1>LEN0142H.v1 Use and maintain plumbing tools and equipment</h1>
Qualification LEN0142.v1 Level: 2 Credit: 8 Version: 1	

CONTENTS	1. Assessment Summary and Record 2. Candidate Assessment 3. Assessor Judgement Guide 4. List of required tools/ equipment, material and context of assessment
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ASSESSMENT AND ASSESSOR DETAILS	Competent <input type="checkbox"/> Not Yet Competent <input type="checkbox"/>																
	Assessment <input type="checkbox"/> Re-Assessment <input type="checkbox"/>																
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CANDIDATE DETAILS	Candidate Name: <small style="display: flex; justify-content: space-between; width: 100%;"> First Name Last Name </small>																				
	Father Name:																				
	Institute Name and District:																				
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	OR Registration Number:																				
Gender Male <input type="checkbox"/> Female <input type="checkbox"/>																					
Candidate Consent I agree to the time and date of the assessment and am aware of the requirements of the assessment. I fully understand my rights of appeal. Candidate Signature:																					

ASSESSMENT RESULTS SUMMARY FORM	You can use this coversheet as an <i>Assessment Results Summary Form</i> . Simply post a photocopy of this completed coversheet to NAVTTTC
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1

ASSESSMENT SUMMARY & RECORD

CANDIDATE NAME:

FATHER NAME:

ACTIVITY	WRITTEN	METHOD			DESIRED OUTCOMES	RESULT	
		ORAL	OBSERVATION	PORTFOLIOS		COMPETENT	NOT YET COMPETENT
NATURE OF ACTIVITY	WRITTEN	ORAL	OBSERVATION	PORTFOLIOS	DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF COMPETENCY STANDARD: USE AND MAINTAIN PLUMBING TOOLS AND EQUIPMENT	COMPETENT	NOT YET COMPETENT
Practical skill demonstration			✓		<ul style="list-style-type: none"> • Use plumbing tools and equipment • Perform bench work • Perform basic arc welding • Maintain plumbing tools and equipment 		
Knowledge Assessment		✓			Answer all questions my assessor may have during the practical assessment		
Other Requirements	✓	✓	✓	✓	<ul style="list-style-type: none"> • All candidate formative assessments completed by Instructor including; <ul style="list-style-type: none"> ○ Observations ○ Demonstrations ○ Questions and recorded answers • All work produced as module projects and assignments • Completed learner logbooks • Completed work records 		

2

CANDIDATE ASSESSMENT

Candidate Name:

Father Name:

ALL WORK ASSESSED IN THIS COMPETENCY STANDARD MUST BE YOUR OWN WORK.

GUIDANCE TO CANDIDATE

To meet this standard you are required to complete the following practical tasks within set timeframe:

- Use plumbing tools and equipment
- Perform bench work
- Perform basic arc welding
- Maintain plumbing tools and equipment

ACTIVITIES	CANDIDATE RESPONSE
<p>1. Complete practical assessment of using and maintaining plumbing tools and equipment under observation by an assessor</p>	<p>During an assessment by an Assessor I will correctly carry out:</p> <p>Using plumbing tools and equipment</p> <ul style="list-style-type: none"> • Identify and select tools, equipment and instruments • Demonstrate safe use of tools, equipment and instruments <p>Perform bench work</p> <ul style="list-style-type: none"> • Secure work piece firmly • Use metal processing tools to perform chip removal forming processes • Use metal processing tools to perform chip-less forming processes <p>Perform basic arc welding</p> <ul style="list-style-type: none"> • Prepare materials • Perform arc welding <p>Maintain plumbing tools and equipment</p> <ul style="list-style-type: none"> • Describe preventive maintenance procedures • Maintain and/or replace tool insulation • Clean and store plumbing tools, equipment and instruments <p>Meet set timeframes for using and maintaining plumbing tools and equipment</p>
<p>2. Complete knowledge assessment</p>	<p>Answer all questions my assessor may have during the practical assessment</p>
<p>3. Other requirements</p>	<ul style="list-style-type: none"> • All candidate formative assessments completed by Instructor including; <ul style="list-style-type: none"> ○ Observations ○ Demonstrations ○ Questions and recorded answers • All work produced as module projects and assignments • Completed learner logbooks • Completed work records • Measuring instrument calibration records

3

ASSESSOR JUDGEMENT GUIDE

Candidate Name:

Father Name:

INSTRUCTIONS FOR ASSESSOR

THIS SECTION CONTAINS MINIMUM EVIDENCE REQUIREMENTS.

The supplied plumbing system requiring use of plumbing tools and equipment must meet the evidence requirements of the candidate's competence in using plumbing tools and equipment

Set timeframe for practical skill demonstration must reflect the commercially viable timeframe for the tasks.

Oral questioning may be used to clarify candidate understanding of the topic and its application

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES/NO	ASSESSOR COMMENTS
1. Complete practical assessment of using and maintaining plumbing tools and equipment under observation by an assessor	During a practical assessment, under observation by an assessor, the candidate correctly carried out:		
	Using plumbing tools and equipment		
	<ul style="list-style-type: none"> Identify and select tools, equipment and instruments Demonstrate safe use of tools, equipment and instruments 		
	Perform bench work		
	<ul style="list-style-type: none"> Secure work piece firmly Use metal processing tools to perform chip removal forming processes Use metal processing tools to perform chip-less forming processes 		
	Perform basic arc welding		
	<ul style="list-style-type: none"> Prepare materials Perform arc welding 		
	Maintain plumbing tools and equipment		
	<ul style="list-style-type: none"> Describe preventive maintenance procedures Maintain and/or replace tool insulation Clean and store plumbing tools, equipment and instruments 		
	Meeting set timeframes for using and maintaining plumbing tools and equipment		
	2.	Answer all questions my assessor may have during the practical assessment	
3. Other requirements	<ul style="list-style-type: none"> All candidate formative assessments completed by Instructor including; <ul style="list-style-type: none"> Observations Demonstrations Questions and recorded answers All work produced as module projects and assignments Completed learner logbooks Completed work records Measuring instrument calibration records 		

4

LIST OF TOOLS, EQUIPMENT, MATERIAL AND CONTEXT OF ASSESSMENT

instructions	<p>This section contains information regarding;</p> <ul style="list-style-type: none"> Context of the assessment List of required tools and equipment. List of consumable items required during the service
1. Context of Assessment	<p>This practical skill demonstration will be conducted in a Plumber's lab/workshop environment</p> <p>The Assessor will select the required tools, equipment and consumables from the list below for the assessment</p>

2. List of tools and equipment required		
S. No	Tools and equipment	Quantity
1	Adjustable wrench 6",8",12"	
2	Pipe Bender Machine Hydraulic complete set	
3	Chisel set	
4	Trowel	
5	Electric Drill machine(hammering with healti)3/4"	
6	Die (Ratchet),Die Fix 1/2,3/4,1,2	
7	Extension board 10 meter 2 core	
8	First Aid box	
9	Gloves lather, rubber	
10	Safety goggles Plastic, glass	
11	Hand Electric Grinder Electric Wall Cutter	
12	Grip plier 10"	
13	Hammer 250gm,500gm,1000gm,1500gm,2000gm	
14	Hand bit 1/4" , 3/8"	
15	Helmet ABS Material	
16	Hacksaw 12" with blade	
17	Spirit Level 6",12",8"	
18	L-key set Star L key Set	
19	Measuring tape meter ,10 meter	
20	Pipe wrench ,10",12",14",18"	
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22	PPRC Heater 750W to 1000W	
23	PPR/Gi cutter 10" Gi Pipe Cutter 1/2 to 2"	
24	Safety boots(Shoes)	
25	Screw driver set 6",8",10",12"	
26	Spanner set 6mm to 24mm	
27	Testing pump (leakage) (Hand type)	
28	Tools box iron+3 draws	
29	Torch Chargeable	
30	Vice with iron stand(2nos)	
31	Compass Spring type 8"	
32	Solar Water Heater (Complete Set) Different denominations of different types	
33	Water Filling Pumps Centrifugal pump 1/2" Reciprocating 1/2	
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36	Bench Vice 5" with bench	
37	Oil Can	
38	Center Punch	

39	Wire Brush	
40	Pipe Reemar	
41	Tap Set 1/8", 1/4", 3/8", 1/2", 3/4", 1" with handle	
42	Air Compressor 10 bar	
43	Tri square 6", 8"	

3. List of consumable items required		
S. No	Consumable items	Quantity
1	Gi Pipe 1/2", 3/4", 1"	
2	Gi fitting 1/2", 3/4", 1" (Elbow, tee, socket etc.)	
3	PPRC pipe 25mm, 32mm	
4	PPRC fitting 25mm, 32mm	
5	PVC pipe 2", 3", 4"	
6	U PVC 2", 3", 4"	
7	P trap 4"	
8	Solution PVC	
9	All types of valves 1/2", 3/4", 1"	
10	Plastic Pipe 1/2", 3/4", 1"	
11	Cp Fitting	



ASSESSMENT MATERIAL EVIDENCE GUIDE	<h1>LEN0142I.v1 Demonstrate knowledge of solar water heating system types</h1>
Qualification LEN0142.v1 Level: 2 Credit: 15 Version: 1	

CONTENTS	<ol style="list-style-type: none"> 1. Assessment Summary and Record 2. Candidate Assessment 3. Assessor Judgement Guide 4. List of required tools/ equipment, material and context of assessment
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CANDIDATE DETAILS	Candidate Name: <small style="display: flex; justify-content: space-between; width: 100%;"> First Name Last Name </small>																			
	Father Name																			
	Institute Name and District																			
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	OR Registration Number:																			
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1

ASSESSMENT SUMMARY & RECORD

CANDIDATE NAME:

FATHER NAME:

ACTIVITY	METHOD				DESIRED OUTCOMES	RESULT	
	WRITTEN	ORAL	OBSERVATION	PORTFOLIOS		COMPETENT	NOT YET COMPETENT
NATURE OF ACTIVITY	WRITTEN	ORAL	OBSERVATION	PORTFOLIOS	DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF COMPETENCY STANDARD: DEMONSTRATE KNOWLEDGE OF SOLAR WATER HEATING SYSTEM TYPES	COMPETENT	NOT YET COMPETENT
Knowledge Assessment		✓			Answer all questions in the knowledge assessment on the following topics: <ul style="list-style-type: none"> • Demonstrate basic knowledge of solar water heating systems • Demonstrate knowledge of solar water heating system components • Outline hazards associated with solar water heating 		
Other Requirements	✓	✓	✓	✓	<ul style="list-style-type: none"> • All candidate formative assessments completed by Instructor including: <ul style="list-style-type: none"> ○ Observations ○ Demonstrations ○ Questions and recorded answers • All work produced as module projects and assignments • Completed learner logbooks • Completed work records 		

2

CANDIDATE ASSESSMENT

Candidate Name:

Father Name:

ALL WORK ASSESSED IN THIS COMPETENCY STANDARD MUST BE YOUR OWN WORK.

GUIDANCE TO CANDIDATE

To meet this standard you are required to complete the following knowledge assessment within 1 hour timeframe on the following topics:

- Demonstrate basic knowledge of solar water heating systems
- Demonstrate knowledge of solar water heating system components
- Outline hazards associated with solar water heating

ACTIVITIES	CANDIDATE RESPONSE
1. Complete knowledge assessment	<p>Answer all questions in the knowledge assessment on the following topics:</p> <p>Demonstrate basic knowledge of solar water heating systems:</p> <ul style="list-style-type: none">• Describe the direct or open loop solar water heating system in terms its operation• Describe the indirect or closed loop solar water heating system in terms its operation• Discuss advantages and disadvantages of each system <p>Demonstrate knowledge of solar water heating system components:</p> <ul style="list-style-type: none">• Describe solar collector options• Describe storage tank options• Explain solar water heating valves and piping• Discuss backup heating options <p>Outline hazards associated with solar water heating</p> <ul style="list-style-type: none">• Define hazards associated with installation of solar water heating systems• Define hazards associated with maintenance of solar water heating systems
2. Other requirements	<ul style="list-style-type: none">• All candidate formative assessments completed by Instructor including;<ul style="list-style-type: none">○ Observations○ Demonstrations○ Questions and recorded answers• All work produced as module projects and assignments• Completed learner logbooks• Completed work records• Measuring instrument calibration records

3

ASSESSOR JUDGEMENT GUIDE

Candidate Name:

Father Name:

INSTRUCTIONS FOR ASSESSOR

THIS SECTION CONTAINS MINIMUM EVIDENCE REQUIREMENTS.

Oral questioning may be used to clarify candidate understanding of the topic and its application.

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES/NO	ASSESSOR COMMENTS
1. Complete knowledge assessment	Answer all questions in the knowledge assessment on the following topics:		
	Demonstrate basic knowledge of solar water heating systems:		
	<ul style="list-style-type: none"> Describe the direct or open loop solar water heating system in terms its operation 		
	<ul style="list-style-type: none"> Describe the indirect or closed loop solar water heating system in terms its operation 		
	<ul style="list-style-type: none"> Discuss advantages and disadvantages of each system 		
	Demonstrate knowledge of solar water heating system components:		
	<ul style="list-style-type: none"> Describe solar collector options 		
	<ul style="list-style-type: none"> Describe storage tank options 		
	<ul style="list-style-type: none"> Explain solar water heating valves and piping 		
	<ul style="list-style-type: none"> Discuss backup heating options 		
2. Other requirements	Outline hazards associated with solar water heating		
	<ul style="list-style-type: none"> Define hazards associated with installation of solar water heating systems 		
	<ul style="list-style-type: none"> Define hazards associated with maintenance of solar water heating systems 		
	<ul style="list-style-type: none"> All candidate formative assessments completed by Instructor including; <ul style="list-style-type: none"> Observations Demonstrations Questions and recorded answers 		
	<ul style="list-style-type: none"> All work produced as module projects and assignments Completed learner logbooks Completed work records Measuring instrument calibration records 		

4

LIST OF TOOLS, EQUIPMENT, MATERIAL AND CONTEXT OF ASSESSMENT

instructions	<p>This section contains information regarding;</p> <ul style="list-style-type: none"> • Context of the assessment • List of required tools and equipment. • List of consumable items required during the service
1. Context of Assessment	This practical skill demonstration will be conducted in a Building Electrician's lab/workshop environment

2. List of consumable items required		
S. No	Consumable Items	Quantity
1	Pen	1 per candidate
2	Knowledge assessment with sufficient space for answers	1 per candidate



ASSESSMENT MATERIAL	<h1>Apply Plumber (Assistant) skills for solar water heating systems</h1>
EVIDENCE GUIDE	
Qualification code: LEN0142.v1 Level: 2 Credit: 80 Version: 1	

CONTENTS	<ol style="list-style-type: none"> 1. Assessment Summary and Record 2. Candidate Assessment 3. Assessor Judgement Guide 4. List of required tools/ equipment, material and context of assessment
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ASSESSMENT AND ASSESSMENT PANEL DETAILS	Competent <input type="checkbox"/> Not Yet Competent <input type="checkbox"/>																			
	Assessment <input type="checkbox"/> Re-Assessment <input type="checkbox"/>																			
	Candidate's Instructor name:																			
	Candidate's Instructor signature:																			
	Private Sector Expert's name:																			
	Private Sector Expert's signature:																			
	Assessor's Name: _____ Assessor Code: _____ Assessor's Signature: Date <table border="1" style="display: inline-table; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> <tr> <td>DD</td> <td>MM</td> <td colspan="4">YYYY</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>											DD	MM	YYYY						
DD	MM	YYYY																		

CANDIDATE DETAILS	Candidate Name: _____ <small style="display: flex; justify-content: space-between; width: 80%; margin: 0 auto;">First Name Last Name</small>																				
	Father Name _____																				
	Institute Name and District _____																				
	CNIC # <table border="1" style="display: inline-table; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table>																				
	OR																				
	Registration Number: _____																				
Gender Male <input type="checkbox"/> Female <input type="checkbox"/>																					
Candidate Consent: I agree to the time and date of the assessment and am aware of the requirements of the assessment. I fully understand my rights of appeal. Candidate Signature: _____																					

ASSESSMENT RESULTS SUMMARY FORM	You can use this coversheet as an <i>Assessment Results Summary Form</i> . Simply post a photocopy of this completed coversheet to NAVTTCC
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NAVTTCC OFFICE ONLY	1. DATE FORM RECEIVED: <table border="1" style="display: inline-table; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> <tr> <td>DD</td> <td>MM</td> <td colspan="4">YYYY</td> <td></td> <td></td> </tr> </table>									DD	MM	YYYY						2. DATE ENTERED INTO DATABASE: <table border="1" style="display: inline-table; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> <tr> <td>DD</td> <td>MM</td> <td colspan="4">YYYY</td> <td></td> <td></td> </tr> </table>									DD	MM	YYYY					
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1

ASSESSMENT SUMMARY AND RECORD

ACTIVITY	METHOD				DESIRED OUTCOMES	RESULT	
	WRITTEN	ORAL	PORTFOLIO	OBSERVATION		COMPETENT	NOT YET COMPETENT
NATURE OF ACTIVITY	WRITTEN	ORAL	PORTFOLIO	OBSERVATION	DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF: APPLY PLUMBER (ASSISTANT) SKILLS FOR SOLAR PV SYSTEMS	COMPETENT	NOT YET COMPETENT
Practical final project	✓	✓	✓	✓	Complete supplied project brief related to application of Plumber (Assistant) skills on solar PV systems: <ul style="list-style-type: none"> • Maintain workplace safety • Apply continuing professional development • Perform preventive maintenance as part of plumbing operations • Perform corrective maintenance as part of plumbing operations • Perform lay-out and excavation • Fix basic sanitary ware • Join fittings and pipes • Use and maintain plumbing tools and equipment • Demonstrate knowledge of solar water heating system types 		
Knowledge assessment		✓			<ul style="list-style-type: none"> • Answer all questions the Assessment Panel will have following oral presentation of completed project brief 		
Other requirements	✓	✓	✓	✓	<ul style="list-style-type: none"> • All completed course assignments, projects and formative assessments including: <ul style="list-style-type: none"> ○ Observations ○ Demonstrations ○ Questions and recorded answers • Oral presentation of project to assessment panel • Completed learner logbooks • Completed work forms/records • Completed job cards • Evidence of participating in training programmes • Documented training outcomes such as reports and portfolio writing • Measuring instrument calibration records 		

2

CANDIDATE ASSESSMENT

Candidate Name..... Father Name

ALL WORK ASSESSED FOR THESE COMPETENCY STANDARDS MUST BE YOUR OWN WORK.

GUIDANCE TO CANDIDATE

To meet this standard you are required to:

- Apply Plumber (Assistant) skills for solar PV systems

ACTIVITIES	CANDIDATE RESPONSE
1. Complete portfolio of evidence	<ul style="list-style-type: none"> • All completed formative assessments including: <ul style="list-style-type: none"> ○ Observations ○ Demonstrations ○ Questions and recorded answers • All completed course assignments and projects including: <ul style="list-style-type: none"> ○ Drawings and sketches of plumbing layouts ○ Calculations of materials, labour costs and overall costs • Completed work forms/records • Completed job cards • Evidence of development of business plan which includes: <ul style="list-style-type: none"> ○ Financial plan ○ Service and product delivery ○ Marketing strategy
2. Complete project brief of applying Plumber (Assistant) skills for solar PV systems under observation by Instructor	<ul style="list-style-type: none"> • I will correctly complete requirements of supplied project brief under the following conditions: <ul style="list-style-type: none"> ○ In a group or individually, as required by project brief ○ Supplied brief will require a 5 day period to complete in a workshop environment <p>Your Assessment Panel will be looking for your competence in:</p> <ul style="list-style-type: none"> ○ Demonstrating task skills, task management (integration of tasks), managing any contingencies which may arise and task outcomes throughout the project timeframe ○ Applying knowledge and skill in the working environment
3. Present completed project brief to Assessment Panel	<ul style="list-style-type: none"> • Oral presentation of project brief and completed project work to Assessment Panel. • Presentation to include: <ul style="list-style-type: none"> ○ Requirements of brief ○ Planning and preparation of project ○ Problems encountered and how they were dealt with ○ Project outcome/s ○ Lessons learnt from undertaking project (reflective thinking) • Presentation to take no longer than 10 minutes
4. Answer all questions Assessor Panel will have following project presentation	<p>My answers to questions are correct and demonstrate my understanding of the topics and their application.</p>


3

ASSESSOR JUDGEMENT GUIDE

Candidate Name Father Name

INSTRUCTIONS FOR ASSESSMENT PANEL	<p>THIS SECTION CONTAINS MINIMUM EVIDENCE REQUIREMENTS.</p> <ul style="list-style-type: none"> The Assessment Panel will consist of three members: a registered Assessor, the candidate's Instructor and an expert from the private sector. The project brief will consist of integrated task requirements to enable the candidate to supply sufficient evidence of their competence in the skills required to work as a Plumber (Assistant) on solar PV systems The project brief must be suitable for the level of knowledge and skills required (i.e. Level 2) The timeframe for completion of assigned project brief is 5 working days The candidate may work in a team or as an individual to complete the project brief. If in a team, the contribution of each candidate must be clearly defined and observable.
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ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES/NO	ASSESSOR COMMENTS ON CANDIDATE PERFORMANCE
1. Completes all course assignments	<ul style="list-style-type: none"> All completed formative assessments including: <ul style="list-style-type: none"> Observations Demonstrations Questions and recorded answers All completed course assignments and projects including: <ul style="list-style-type: none"> Drawings and sketches of plumbing layouts Calculations of materials, labour costs and overall costs Completed work forms/records Completed job cards Evidence of development of business plan which includes: <ul style="list-style-type: none"> Financial plan Service and product delivery Marketing strategy 		
2. Complete project brief of applying Plumber (Assistant) skills on solar photovoltaic (PV) systems under observation by Instructor	<p>Completed requirements of supplied project brief under the following conditions:</p> <ul style="list-style-type: none"> In a group or individually, as required by project brief Supplied brief will require a 5 day period to complete in a workshop environment Demonstrating task skills, task management (integration of tasks), managing any contingencies which may arise and task outcomes throughout the project timeframe Applying knowledge and skill in the working environment 		
3. Present completed project brief to Assessment Panel	<p>Oral presentation of project brief and completed project work to Assessment Panel.</p> <p>Presentation to include:</p> <ul style="list-style-type: none"> Requirements of brief Planning and preparation of project Problems encountered and how they were dealt with Project outcome/s Lesson learnt (reflective thinking) 		

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES/NO		ASSESSOR COMMENTS ON CANDIDATE PERFORMANCE
	Presentation to take no longer than 10 minutes			
4. Answer all questions Assessment Panel will have following project presentation	Candidate confidently answered questions correctly and demonstrated understanding of the topics and their application. Assessment Panel to document all questions asked, if any, and the answers here. Use extra pages as required and attach here. 			

4

LIST OF TOOLS, EQUIPMENT, MATERIAL AND CONTEXT OF ASSESSMENT

instructions

This section contains information regarding;

- Context of the assessment
- List of required tools and equipment.
- List of consumable items required during the service


1. Context of Assessment


This practical final project will be conducted in a Plumber's lab/workshop environment.


Required tools, equipment and consumables will vary according to project brief.


National Vocational and Technical Training Commission (NAVTTTC)

 5th Floor Evacuee Trust Complex Sector F-5/1, Islamabad.

 +92 51 9044 04

 +92 51 9044 04

 info@navttc.org

 www.navttc.org