



ASSESSMENT MATERIAL EVIDENCE GUIDE Qualification LEN0153.v1 Level: 3 Credit: 20 Version: 1	LEN0153C.v1 Install solar water heating Appliances																																													
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ASSESSMENT AND ASSESSOR DETAILS	<table><tr><td>Competent</td><td>☐</td><td>Not Yet Competent</td><td>☐</td></tr><tr><td>Assessment</td><td>☐</td><td>Re-Assessment</td><td>☐</td></tr><tr><td>Assessor Name:</td><td colspan="3">Assessor Code</td></tr><tr><td>Assessor Signature</td><td colspan="3">Date</td></tr><tr><td></td><td></td><td>DD</td><td>MM</td></tr><tr><td></td><td></td><td>YYYY</td><td></td></tr></table>	Competent	☐	Not Yet Competent	☐	Assessment	☐	Re-Assessment	☐	Assessor Name:	Assessor Code			Assessor Signature	Date					DD	MM			YYYY																						
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ASSESSMENT SUMMARY & RECORD

CANDIDATE NAME:					FATHER NAME:		
ACTIVITY		METHOD			DESIRED OUTCOMES	RESULT	
NATURE OF ACTIVITY	WRITTEN	ORAL	OBSERVATION	PORTFOLIOS	DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF COMPETENCY STANDARD: INSTALL, COMMISSION AND MAINTAIN SOLAR WATER HEATING SYSTEM	COMPETENT	NOT YET COMPETENT
Practical skill demonstration			✓		- Plan and prepare for work - Install and commission solar water heating system - Carry out maintenance on solar water heating system components - Complete work		
Knowledge Assessment		✓			Answer any questions your assessor may have for you during the practical skill demonstration		
Other Requirements	✓	✓	✓	✓	- All candidate formative assessments completed by Instructor including; - Observations - Demonstrations - Questions and recorded answers - All work completed as module assignments and projects including evidence of carrying out Lux readings - Completed work records - Completed learner logbooks		

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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 of installing, commissioning and maintaining solar water heating system within set timeframe:

- Plan and prepare for work
- Install and commission solar water heating system
- Carry out maintenance on solar water heating system components
- Complete work

ACTIVITIES	CANDIDATE RESPONSE
1. Complete practical assessment of installing, commissioning and maintaining solar water heating system under observation by an Assessor	During a practical assessment, under observation by an assessor, I will correctly: Plan and prepare for work • Identify and obtain safety and other regulatory requirements for installation • Conduct site survey • Interpret and confirm layout plan and installation location for sufficient light radiation • Perform measurements as required Install and commission solar water heating system • Check for safety hazards • Join and install water stand, pipes and fittings • Commission solar water heating system and conduct operational testing Carry out maintenance on solar water heating system components ○ Check for safety hazards and secure worksite ○ Select tools and equipment for maintenance ○ Carry out maintenance procedures and operational measurements Complete work • Complete work related documents and procedures • Perform final quality inspection • Clean up and store tools, equipment and material Meeting set timeframes required for using and maintaining hand tools and hand-held powered tools and equipment for electrical, mechanical and civil construction works
2. Complete knowledge assessment	Answer all questions my assessor may have during the practical assessment
3. Other requirements	• All candidate formative assessments completed by Instructor including; ○ Observations ○ Demonstrations ○ Questions and recorded answers • All work completed as module assignments and projects including evidence of carrying out Lux readings • Completed work records • Completed learner logbooks

Candidate Name:

Father Name:

**INSTRUCTIONS
FOR
ASSESSOR**

THIS SECTION CONTAINS MINIMUM EVIDENCE REQUIREMENTS.

The supplied solar water heating system requiring installation, commissioning and maintenance must meet the evidence requirements of the candidate's competence in installing, commissioning and maintaining solar water heating systems.

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 installing, commissioning and maintaining solar water heating system under observation by an Assessor	During a practical assessment, under observation by an assessor, the candidate correctly carried out:		
	Planning and preparing for work		
	Identify and obtain safety and other regulatory requirements for installation		
	Conduct site survey		
	Interpret and confirm layout plan and installation location for sufficient light radiation		
	Perform measurements as required		
	Installing and commissioning solar water heating system		
	Check for safety hazards		
	Join and install water stand, pipes and fittings		
	Commission solar water heating system and conduct operational testing		
	Carrying out maintenance on solar water heating system components		
	Check for safety hazards and secure worksite		
	Select tools and equipment for maintenance		
	Carry out maintenance procedures and operational measurements		
	Completing work		
	Complete work related documents and procedures		
	Perform final quality inspection		
	Clean up and store tools, equipment and material		
	Meeting set timeframe appropriate for supplied solar water heating system requiring installation, commissioning and maintenance		
2. Knowledge assessment	Candidate's answers to questions are correct and demonstrate understanding of the topics and their application. <i>Assessor to document below all questions asked and candidate answers. Use extra sheets if required and attached.</i>		
3. Other requirements	All candidate formative assessments completed by Instructor including;		

	○ Observations ○ Demonstrations ○ Questions and recorded answers • All work completed as module assignments and projects including evidence of carrying out Lux readings • Completed work records • Completed learner logbooks			
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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 skill demonstration will be conducted in a Plumber's lab/workshop environment The Assessor will select the required tools, equipment and consumables from the list below for the assessment

1. 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"	

2. List of consumable items required		
S. No	Consumable Items	Quantity
1	Gi Pipe ½", ¾", 1"	
2	Gi fitting ½", ¾", 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 ½"	
10	Plastic Pipe ½", ¾", 1"	
11	Cp Fitting	