



Technical, Entrepreneurship and Vocational Education and Training Authority (TEVETA)

TRADE TEST IN METAL FABRICATION AND WELDING TRADE TEST LEVEL 2

Record of Practical Assessment

Learner`s name:_____

Learner`s NRC no.:_____

Learner`s TEVETA No.:_____

Institution Name:_____

Institution TVA No.:_____

Assessment Period:_____

PREFACE

The Technical Education, Vocational and Entrepreneurship Training Authority (TEVETA) is an institution created under the Technical Education, Vocational and Entrepreneurship Training Act Number 13 of 1998, as amended by the Technical Education, Vocational and Entrepreneurship Training (Amendment) Act Number 11 of 2005.

The Act among other things provides that TEVETA shall:

- (a) regulate and conduct national examinations and assessments relating to technical education, vocational and entrepreneurship training;
- (b) charge and collect fees in respect of examinations, assessments and other services provided by the Authority;
- (c) award certificates to persons who succeed in examinations and assessments undertaken under this Act
- (d) do all such things connected with or incidental to the functions of the Authority under this Act.

Through this mandate, the Assessment and Qualifications Division of TEVETA has developed Practical Assessment Tool Kits to enable learners achieve the competences that are congruent with the demand of the workplace tasks. These tool kits in part are also intended to ensure that similar conditions under which all students in TEVET are assessed and examined apply wherever the course is undertaken in Zambia.

The Trainers shall work with the Learners to collect evidence of competence, using the benchmarks provided by the unit standards. During the year, the Learners shall be required to undertake a series of practical assessment tasks. It is the sum of all these assessments tasks that deems a Learner to be competent (or not).

This approach to assessment is not a one-off event but one that gives learners many opportunities to demonstrate skill and allow for the capturing and recording of these demonstrations.

For the Learner to be deemed competent, they must demonstrate competency in every aspect of the practical tasks being undertaken. It must however be understood by the Trainer that Competency does not mean expert. It means that the candidate has attained sufficient skill and knowledge to perform the activity or service to a degree and quality that is acceptable to the industry and the customer in a time within which a competent person at the level could reasonably be expected to perform the task.

While this will be undertaken at institutional level, it is therefore envisaged that the Assessment principles of VALIDITY, RELIABILITY, FAIRENESS and FLEXIBILITY shall at all times be adhered to.

Pre-Assessment

Assessment process explained to the Trainee (✓ if Yes).	☐
Any appeal relating to the outcome of the assessment or the way in which the assessment was conducted shall be made through the TEVETA <u><i>fair treatment policy</i></u> as explained to the Trainee (✓ if Yes).	☐

Learner/Trainee Learner/Trainee name: (Print) Learner/Trainee comments:	Assessor/Examiner Assessor/Examiner name: (Print) Assessor/Examiner comments:
I fully understand the assessment and appeals process.	Practical assessment sighted and checked as satisfactory. ☐
Signature: Date:	Signature: Date:

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TASK 1: SAFETY

Activity						
	Satisfactory			Not Satisfactory		
	1	2	3	1	2	3
During observation of work activities, the candidates demonstrated that they can:						
(a) Use PPE in the work shop/site. This may include: ▪ Use Work suits/overalls ▪ Use safety shoes/boots ▪ Use fire-proof attire ▪ Use face shields ▪ Use safety glasses						
(b) Use of Fire fighting equipment in the workshop. This may include: ▪ Use of Fire extinguishers ▪ use of fire assembly points ▪ Use of fire alarms ▪ Identifying exit points						
(c) Provide adequate ventilation to all work places. This may include: ▪ Allowing free circulation of air						
(d) Apply good housekeeping in the workshop. This may include: ▪ Cleaning workplaces before and after work ▪ Storing and cleaning of tools ▪ Storing and staking of materials properly ▪ Leaving Gang ways free from obstruction						

Examiner`s comments:

Signed:

Examiner Name/Sign:

Learner`s Name/sign:

Date:

Date:

TASK 2: CUTTING STEEL MATERIALS

No	Activity						
		Satisfactory			Not Satisfactory		
		1	2	3	1	2	3
During observation of work activities, the candidates demonstrated that they can:							
	Cut steel materials as per specification below. This should include: (a) Use of hand tools: (1) Measuring tools • Measuring tape • Steel rule (2) Marking tools • Scriber • Centre punch (3) Cutting tools • Hack saw • Cold chisel (b) Use of an angle grinder as per given specifications. This may include: (1) cutting steel materials (2) grinding of burs or rough edges from cut material						
(a) Specifications							
Steel sections		Profiles					
Cut to size the following from given materials:							
1	Flat bars	1off 150 x 50 x 5mm mild steel plate					
2	Round bars	1off 12mm dia. RB of length 150mm					
3	Square tubes	1off 25 x 25 square tube length 150					
4	Round tube	1off Nominal bore 25mm dia. round tube, length 150mm					
5	Angle irons	1off 25 x 25 x 5mm of length 150mm					
(b) Specifications							
Steel sections		profiles					
Cut to size the following from given materials:							
1	Cylindrical pipe	1off 100mm nominal bore mild steel pipe and length 340mm					
2	RF7 or Z bar	4off 600mm mild steel Z bars/RF7					

Examiner`s comments:

Signed:

Examiner Name/Sign:

Learner`s Name/sign:

Date:

Date:

TASK 3: FORMING STEEL MATERIAL

Activity						
	Satisfactory			Not Satisfactory		
	1	2	3	1	2	3
During observation of work activities, the candidates demonstrated that they can:						
(a) Use forming tools, this may include: Rolling a circular ring as per given specifications.						
Specifications Material: 300 x 50 x 2mm mild steel plate						

Examiner`s comments:

Signed:

Examiner Name/Sign:

Learner`s Name/sign:

Date:

Date:

TASK 4: USE OF A PEDESTAL/BENCH GRINDER

No	Activity						
		Satisfactory			Not Satisfactory		
		1	2	3	1	2	3
During observation of work activities, the candidates demonstrated that they can:							
	(a) Adhere to precautions which may include: ▪ Use clear safety goggles. ▪ Ensure that guards on rotating parts are in place during grinding operations. ▪ Check and adjusting the tool rest clearance to standard gap of 1-3mm between it and the wheel. ▪ Check the status of wheels if clogged or not						
	(b) Grinding and sharpening tools. This may include: ▪ Grinding of a mushroomed chisel head ▪ Sharpening a blunt chisel ▪ Sharpening a blunt dot punch						

Examiner`s comments:

Signed:

Examiner Name/Sign:

Learner`s Name/sign:

Date:

Date:

TASK 5 USE OF DRILLING MACHINES

Activity						
	Satisfactory			Not Satisfactory		
	1	2	3	1	2	3
During observations of work activities, the candidates demonstrated that they can:						
(a) Carry out drilling operations. This may include:						
Drilling of circular holes as per given specifications						
Specifications: Material: 100 x 100 x 5mm thick mild steel plate Drill bit 10mm dia. Instruction: Drill a row of 5 equally spaced holes along the centre. Examiner`s comments:						

Signed:

Examiner Name/Sign:

Learner`s Name/sign:

Date:

Date:

TASK 6: USE OF A PUNCHING MACHINE

Activity						
	Satisfactory			Not Satisfactory		
	1	2	3	1	2	3
During observation of work activities, the candidates demonstrated that they can:						
Carry out punching operations. This may include: Punching cylindrical holes and square holes as per given specifications.						
Specifications Material 100 x 100 x 3mm thick mild steel plate						

Examiner`s comments:

Signed:

Examiner Name/Sign:

Learner`s Name/sign:

Date:

Date:

TASK 7: USE OF A GUILLOTINE SHEARING MACHINES.

Activity						
	Satisfactory			Not Satisfactory		
	1	2	3	1	2	3
During observation of work activities, the candidates demonstrated that they can:						
Perform the cutting operation on the machine. This may include: Cutting a piece of mild steel plate as per given specifications.						
Specification: Material: 6 off 100 x 50 x 3mm thick mild steel plate						

Examiner`s comments:

Signed:

Examiner Name/Sign:

Learner`s Name/sign:

Date:

Date:

TASK 8: IDENTIFICATION OF GAS WELDING MATERIALS

Activity						
	Satisfactory			Not Satisfactory		
	1	2	3	1	2	3
During observations of work activities, the candidate demonstrated that they can:						
(a) Select materials that can be welded using gas. This may include: • Use Mild steel • Use Medium carbon steel • Use High carbon steel						

Examiner`s comments:

Signed:

Examiner Name/Sign:

Learner`s Name/sign:

Date:

Date:

TASK 9: ASSEMBLY OF AN OXY-ACETYLENE EQUIPMENT.

Activity						
	Satisfactory			Not Satisfactory		
	1	2	3	1	2	3
During observation of work activities, the candidates demonstrated that they can:						
(a) Connect all accessories that constitute a complete oxy-acetylene set. This includes: ▪ Securing Cylinders upright on trolleys ▪ Connecting Pressure regulators ▪ Connecting Safety valves (flash back arrestors and non-return valves) ▪ Connecting Hoses ▪ Connecting a Torch/blow pipe (welding/cutting) ▪ Selecting and connecting appropriate Nozzles						

Examiner`s comments:

Signed:

Examiner Name/Sign:

Learner`s Name/sign:

Date:

Date:

TASK 10: LIGHTING AND ADJUSTING A WELDING FLAME

No	Activity						
		Satisfactory			Not Satisfactory		
		1	2	3	1	2	3
During observation of work activities, the candidates demonstrated that they can:							
(a)	Carry out lighting and adjusting a welding flame. This may include: ▪ Setting correct pressures for lighting the torch ▪ Using correct size of nozzles/tips for the job ▪ Ensuring correct procedure of opening and closing the acetylene and oxygen knobs on the torch ▪ Checking for gas leaks on the assembled equipment, using recommended methods. (e.g. use of soapy water/smell/sound).						
(b)	Carry out the required start up procedures of lighting and adjusting a flame. This may include: ▪ Opening enough acetylene to be lit ▪ Ensuring the use of a spark lighter/flint gun and not any other. ▪ Checking the correct features of the required flame (e.g. neutral/oxidizing/carburizing flames)						

Examiner`s comments:

Signed:

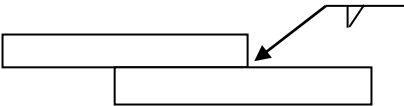
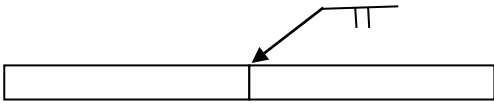
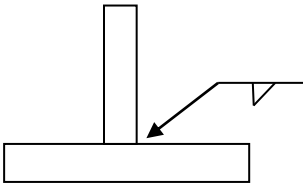
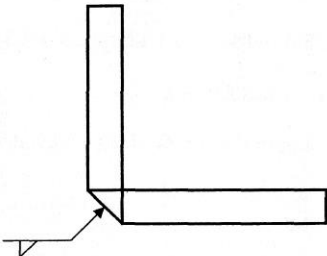
Examiner Name/Sign:

Learner`s Name/sign:

Date:

Date:

TASK 11: GAS WELD BASIC TYPES OF JOINTS

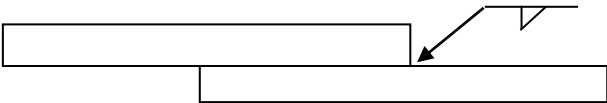
Activity							
		Satisfactory			Not Satisfactory		
		1	2	3	1	2	3
During observation of work activities, the candidates demonstrated that they can:							
Carry out welding in position on all joints as per given specifications below. This may include: (1) Lap (2) Butt (3) Fillet (4) corner							
1.		Specifications: - mild steel filler rod 2off 100 X 50 X 3mm mild steel plates.					
2.		Specifications: - mild steel filler rod 2off 100 X 50 X 3mm mild steel plates.					
3.		Specifications: - mild steel filler rod 2off 100 X 50 X 3mm mild steel plates.					
4.		Specifications: - mild steel filler rod 2off 100 X 50 X 3mm mild steel plates.					

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Learner`s Name/sign:

Date:

TASK 12: USE OF FILLER RODS AND FLUX TO GAS WELD MATERIALS

Activity						
	Satisfactory			Not Satisfactory		
	1	2	3	1	2	3
During work observations, candidates demonstrated that they can:						
(a) Use filler rods with fluxing material. This may include: Use of Low carbon steel rods to braze a lap joint in flat position as per specifications given below.						
	Specifications: Material: - flux – borax 2 off 100 x 50 x 3mm thick mild steel plates					

Examiner`s comments:

Signed:

Examiner Name/Sign:

Learner`s Name/sign:

Date:

Date:

TASK 13: ASSEMBLY OF AN ELECTRIC ARC WELDING MACHINES

Activity/ operation						
	Satisfactory			Not Satisfactory		
	1	2	3	1	2	3
During observation of work, the candidates demonstrated that they can:						
(a) Assemble the welding machine. This may include: ▪ Connecting the earth and weld leads ▪ Connecting the electrode holder and earth clamp ▪ Plugging the machine to main power source ▪ Powering and testing the machine						

Examiner`s comments:

Signed:

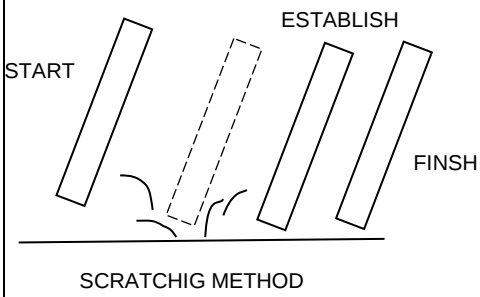
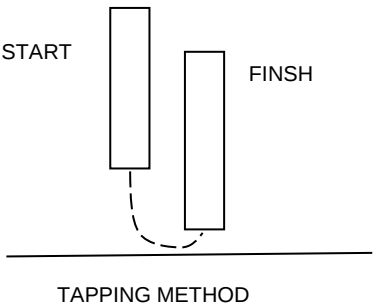
Examiner Name/Sign:

Learner`s Name/sign:

Date:

Date:

TASK 14: PERFORM STRIKING AN ARC USING ELECTRIC ARC WELDING MACHINE

Activity/Operation							
		Satisfactory			Not Satisfactory		
		1	2	3	1	2	3
During observation of work, the candidates demonstrated that they can:							
(a) Strike an arc on a given material in the specifications below. This could include: (1) scratching method (2) Using tapping method							
1.		Specifications: Material: 100 x 100 x 5mm thick mild steel plate. 3.25mm dia. M/S electrodes					
2.		Specifications: Material: 100 x 100 x 5mm thick mild steel plate. 3.25mm dia. M/S electrodes					

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Learner`s Name/sign:

Date:

TASK 15: WELD IN FLAT POSITION

Activity						
	Satisfactory			Not Satisfactory		
	1	2	3	1	2	3
During observation of work activities, the candidates demonstrated that they can:						
(a) Weld in flat position as per given specifications. This could include: ▪ Weld Single pass fillet ▪ Weld multiple pass fillet ▪ Weld Single pass 'T' fillet joint ▪ Weld multiple pass T fillet ▪ Weld outside corner joint ▪ Weld open butt joint						
Specifications: Material – 12 off 150 x 50 x 5mm thick mild steel plate Electrodes – 20 sticks of 3.25mm dia. mild steel electrodes						

Examiner`s comments:

Signed:

Examiner Name/Sign:

Learner`s Name/sign:

Date:

Date:

TASK 16: WELD IN HORIZONTAL POSITION

Activity/Operation						
	Satisfactory			Not Satisfactory		
	1	2	3	1	2	3
During observation of work activities, the candidates demonstrated that they can:						
(a) Weld in horizontal position as per given specifications. This could include: - Weld straight single butt - Weld multiple pass fillet: - Weld multiple pass butt joint						
Specifications: Material – 6 off 150 x 50 x 5mm thick mild steel plate Electrodes – 10 sticks of 3.25mm dia. mild steel electrodes						

Examiner`s comments:

Signed:

Examiner Name/Sign:

Learner`s Name/sign:

Date:

Date:

TASK 17: PERFORM ARC WELDING IN VERTICAL POSITION

Activity/Operation	Satisfactory			Not Satisfactory		
	1	2	3	1	2	3
During observation of work activities, the candidates demonstrated that they can:						
(a) Weld in vertical position as per given specifications. This may include: ▪ Welding a lap joint ▪ Welding a Vee butt joint ▪ Welding a vertical T fillet joint						
Specifications: Material – 6 off 150 x 50 x 5mm thick mild steel plate Electrodes – 10 sticks of 3.25mm dia. mild steel electrodes						

Examiner`s comments:

Signed:

Examiner Name/Sign:

Learner`s Name/sign:

Date:

Date:

TASK 18: CARRY OUT WELDING IN OVERHEAD POSITION

Activity/Operation						
	Satisfactory			Not Satisfactory		
	1	2	3	1	2	3
During observation of work activities, the candidates demonstrated that they can:						
(a) Weld in overhead position as per given specifications. This could include: - Welding on a butt joint - Welding on a lap joint - Welding on a T fillet - Welding on a corner joint						
Specifications: Material – 8 off 150 x 50 x 5mm thick mild steel plate Electrodes – 10 sticks of 3.25mm dia. mild steel electrodes						

Examiner`s comments:

Signed:

Examiner Name/Sign:

Learner`s Name/sign:

Date:

Date:

TASK 19: CONSTRUCTION OF BASIC ANGLES AND PLAIN FIGURES

Activity						
	Satisfactory			Not Satisfactory		
	1	2	3	1	2	3
During observation of work activities, the candidates demonstrated that they can:						
(a) Construct basic angles and plain figures. This may include: - Constructing angles e.g. 45°, 90° and 60° - Constructing plain figures i.e. (circles, polygons, arc centres).						

Examiner`s comments:

Signed:

Examiner Name/Sign:

Learner`s Name/sign:

Date:

Date:

TASK 20: PERFORM BLUE PRINT READING

Activity						
	Satisfactory			Not Satisfactory		
	1	2	3	1	2	3
During observation of work activities, the candidates demonstrated that they can:						
(a) Carry out blue print reading of engineering drawings as shown in figure 2 below. These may include the following: - Interpreting engineering drawings - Reading welding symbols and apply them E.G weld all round, weld on site, weld both sides: fillet, butt. Machine flash, arrow side, flame cut.						

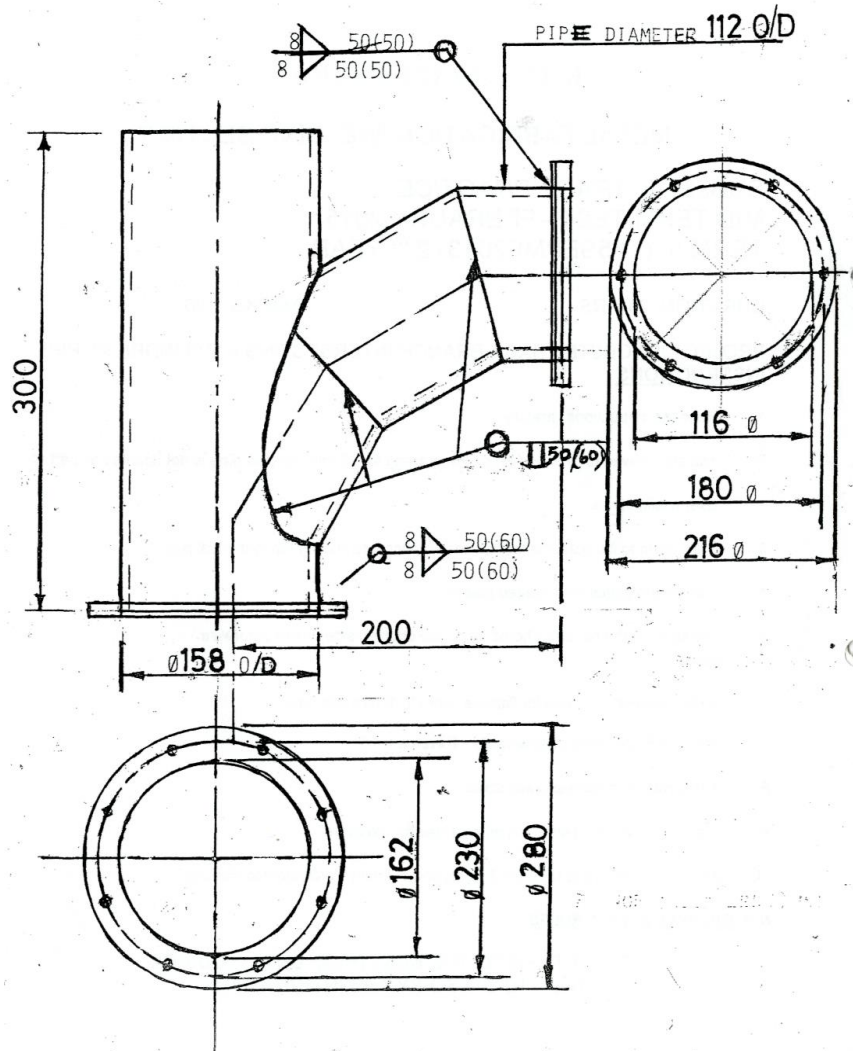


FIGURE 2

Examiner`s comments:

Signed:

Examiner Name/Sign:

Learner`s Name/sign:

Date:

Date:

FINAL PRACTICAL ASSESSMENT SUMMARY

	Satisfactory	Not Satisfactory
1. SAFETY	☐	☐
2. CUTTING STEEL MATERIALS	☐	☐
3. FORMING STEEL MATERIAL	☐	☐
4. USE OF A PEDESTAL/BENCH GRINDER	☐	☐
5. USE OF DRILLING MACHINES	☐	☐
6. USE OF A PUNCHING MACHINE	☐	☐
7. USE OF A GUILLOTINE SHEARING MACHINES	☐	☐
8. IDENTIFICATION OF GAS WELDING MATERIALS	☐	☐
9. ASSEMBLY OF AN OXY-ACETYLENE EQUIPMENT	☐	☐
10. LIGHTING AND ADJUSTING A WELDING FLAME	☐	☐
11. GAS WELD BASIC TYPES OF JOINTS	☐	☐
12. USE OF FILLER RODS AND FLUX TO GAS WELD MATERIALS	☐	☐
13. ASSEMBLY OF AN ELECTRIC ARC WELDING MACHINES	☐	☐

ASSESSMENT OUTCOME

Competent ☐

Not Competent ☐

Learner/Trainee	Assessor/Examiner
Learner/Trainee name: _____ (Print)	Assessor/Examiner name: _____ (Print)
Learner/Trainee comments:	Assessor/Examiner comments:
Signature: _____ Date: _____	Signature: _____ Date: _____

VALIDATION OF THE ASSESSMENT

NAME:.....

DATE:.....

POSITION: PRINCIPAL/HEAD OF INSTITUTION

SIGNATURE:.....

NAME INSTITUTION:.....

STAMP:

