



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

## CRAFT CERTIFICATE IN METAL FABRICATION AND WELDING LEVEL 1

### 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).	<input type="checkbox"/>
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>fair treatment policy</u> as explained to the Trainee (✓ if Yes).	<input type="checkbox"/>

<b>Learner/Trainee</b>  Learner/Trainee name: (Print)  Learner/Trainee comments:	<b>Assessor/Examiner</b>  Assessor/Examiner name: (Print)  Assessor/Examiner comments:	
I fully understand the assessment and appeals process.	Practical assessment sighted and checked as satisfactory.	<input type="checkbox"/>
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) se PPE in the work shop/site. This may include: <ul style="list-style-type: none"> <li>▪ Use Work suits/overalls</li> <li>▪ Use safety shoes/boots</li> <li>▪ Use fire-proof attire</li> <li>▪ Use face shields</li> <li>▪ Use safety glasses</li> </ul>						
(b) Use of Fire fighting equipment in the workshop. This may include: <ul style="list-style-type: none"> <li>▪ Use of Fire extinguishers</li> <li>▪ use of fire assembly points</li> <li>▪ Use of fire alarms</li> <li>▪ Identifying exit points</li> </ul>						
(c) Provide adequate ventilation to all work places. This may include: <ul style="list-style-type: none"> <li>▪ Allowing free circulation of air</li> </ul>						
(d) Apply good housekeeping in the workshop. This may include: <ul style="list-style-type: none"> <li>▪ Cleaning workplaces before and after work</li> <li>▪ Storing and cleaning of tools</li> <li>▪ Storing and staking of materials properly</li> <li>▪ Leaving Gang ways free from obstruction</li> </ul>						

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## 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							
<b>(a) Specifications</b>							
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>(b) Specifications</b>							
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					

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### 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: <ul style="list-style-type: none"> <li>Rolling a circular ring as per given specifications.</li> </ul>						
<b>Specifications</b> Material: 300 x 50 x 2mm mild steel plate						

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#### 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: <ul style="list-style-type: none"><li>▪ Use clear safety goggles.</li><li>▪ Ensure that guards on rotating parts are in place during grinding operations.</li><li>▪ Check and adjusting the tool rest clearance to standard gap of 1-3mm between it and the wheel.</li><li>▪ Check the status of wheels if clogged or not</li></ul>						
	(b) Grinding and sharpening tools. This may include: <ul style="list-style-type: none"><li>▪ Grinding of a mushroomed chisel head</li><li>▪ Sharpening a blunt chisel</li><li>▪ Sharpening a blunt dot punch</li></ul>						

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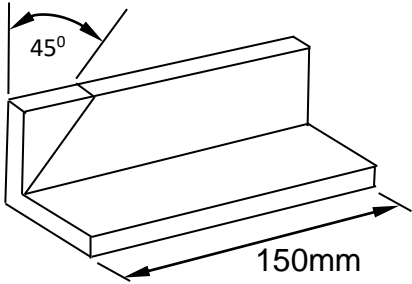


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## TASK 5: USE OF AN ABRASIVE CUTTER.

Activity						
	Satisfactory			Not Satisfactory		
	1	2	3	1	2	3
During observation of work activities, the candidates demonstrated that they can:						
(a) Perform the cutting operation. This may include:						
<ul style="list-style-type: none"> <li>Cutting at 90 degrees and at 45 degrees as per given specifications.</li> </ul>						
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;">  </div> <div style="width: 50%;"> <p><b>Specifications:</b> Material – 50 x 50 x 6mm angle iron and 160mm long</p> <p><b>Instruction:</b> Cut at 45 degrees on one end and at 90 degrees on the other end as shown in the diagram.</p> </div> </div>						

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## TASK 6 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						
<b>Specifications:</b> 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.						
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## TASK 7: 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.						
<b>Specifications</b> Material 100 x 100 x 3mm thick mild steel plate						

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## TASK 8: 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: <ul style="list-style-type: none"> <li>Cutting a piece of mild steel plate as per given specifications.</li> </ul>						
<b>Specification:</b> Material: 6 off 100 x 50 x 3mm thick mild steel plate						

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## TASK 9: 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: <ul style="list-style-type: none"> <li>• Use Mild steel</li> <li>• Use Medium carbon steel</li> <li>• Use High carbon steel</li> </ul>						

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## TASK 10: 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: <ul style="list-style-type: none"> <li>▪ Securing Cylinders upright on trolleys</li> <li>▪ Connecting Pressure regulators</li> <li>▪ Connecting Safety valves (flash back arrestors and non-return valves)</li> <li>▪ Connecting Hoses</li> <li>▪ Connecting a Torch/blow pipe (welding/cutting)</li> <li>▪ Selecting and connecting appropriate Nozzles</li> </ul>						

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## TASK 11: 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: <ul style="list-style-type: none"><li>▪ Setting correct pressures for lighting the torch</li><li>▪ Using correct size of nozzles/tips for the job</li><li>▪ Ensuring correct procedure of opening and closing the acetylene and oxygen knobs on the torch</li><li>▪ Checking for gas leaks on the assembled equipment, using recommended methods. (e.g. use of soapy water/smell/sound).</li></ul>						
(b)	Carry out the required start up procedures of lighting and adjusting a flame. This may include: <ul style="list-style-type: none"><li>▪ Opening enough acetylene to be lit</li><li>▪ Ensuring the use of a spark lighter/flint gun and not any other.</li><li>▪ Checking the correct features of the required flame (e.g. neutral/oxidizing/carburizing flames)</li></ul>						

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## TASK 12: 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.		<b>Specifications:</b> <ul style="list-style-type: none"> <li>mild steel filler rod</li> <li>2off 100 X 50 X 3mm mild steel plates.</li> </ul>					
2.		<b>Specifications:</b> <ul style="list-style-type: none"> <li>mild steel filler rod</li> <li>2off 100 X 50 X 3mm mild steel plates.</li> </ul>					
3.		<b>Specifications:</b> <ul style="list-style-type: none"> <li>mild steel filler rod</li> <li>2off 100 X 50 X 3mm mild steel plates.</li> </ul>					
4.		<b>Specifications:</b> <ul style="list-style-type: none"> <li>mild steel filler rod</li> <li>2off 100 X 50 X 3mm mild steel plates.</li> </ul>					

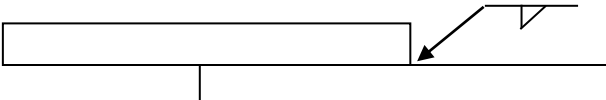
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### TASK 13: USE OF FILLER RODS AND FLUX TO GAS WELD MATERIALS

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: <ul style="list-style-type: none"> <li>Use of Low carbon steel rods to braze a lap joint in flat position as per specifications given below.</li> </ul>						
	<b>Specifications:</b> Material: <ul style="list-style-type: none"> <li>flux – borax</li> <li>2 off 100 x 50 x 3mm thick mild steel plates</li> </ul>					

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## TASK 14: 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: <ul style="list-style-type: none"> <li>Connecting the earth and weld leads</li> <li>Connecting the electrode holder and earth clamp</li> <li>Plugging the machine to main power source</li> <li>Powering and testing the machine</li> </ul>						

Examiner`s comments:

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## TASK 15: SELECTION AND STORAGE OF ELECTRODES

Activity/Operation						
	Satisfactory			Not Satisfactory		
	1	2	3	1	2	3
During observation of work activities, the candidates demonstrated that they can:						
(a) Select the appropriate type of electrode. This may include: <ul style="list-style-type: none"> <li>▪ Select Mild steel electrodes</li> <li>▪ Select High carbon steel electrodes</li> <li>▪ Select Special alloy steel electrodes,</li> <li>▪ Select Cast iron electrodes</li> <li>▪ Select non-ferrous metal electrodes</li> <li>▪ Select proper storage of electrodes</li> </ul>						

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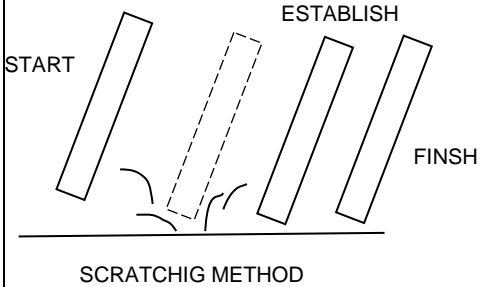
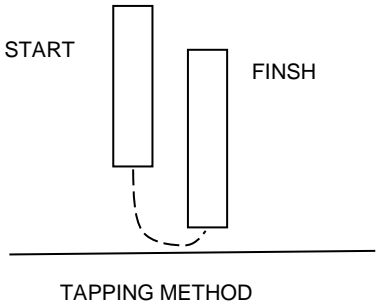
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## TASK 16: PERFORM STRIKING AN ARC USING ELECTRIC ARC WELDING MACHINE

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.		<b>Specifications:</b> Material: 100 x 100 x 5mm thick mild steel plate. 3.25mm dia. M/S electrodes					
2.		<b>Specifications:</b> Material: 100 x 100 x 5mm thick mild steel plate. 3.25mm dia. M/S electrodes					

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## TASK 17: RUN CONTINUOUS WELD BEADS

Activity/Operation						
	Satisfactory			Not Satisfactory		
	1	2	3	1	2	3
During observation of work activities, the candidates demonstrated that they can:						
(a) Run continuous weld beads as per specifications given below. This include:						
▪ Using an arc welding machine						
▪ Using wire brush, chipping hammers						
Specifications:						
Material:						
• 200 x 200 x 5mm thick mild steel plate						
• 4 by 3.25mm dia. mild steel electrodes						

Examiner`s comments:

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## TASK 18: 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: <ul style="list-style-type: none"> <li>▪ Weld Single pass fillet</li> <li>▪ Weld multiple pass fillet</li> <li>▪ Weld Single pass 'T' fillet joint</li> <li>▪ Weld multiple pass T fillet</li> <li>▪ Weld outside corner joint</li> <li>▪ Weld open butt joint</li> </ul>						
<b>Specifications:</b> 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:

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## TASK 19: 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: <ul style="list-style-type: none"> <li>Weld straight single butt</li> <li>Weld multiple pass fillet:</li> <li>Weld multiple pass butt joint</li> </ul>						
<b>Specifications:</b> Material – 6 off 150 x 50 x 5mm thick mild steel plate Electrodes – 10 sticks of 3.25mm dia. mild steel electrodes						

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## TASK 20: 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: <ul style="list-style-type: none"> <li>▪ Welding a lap joint</li> <li>▪ Welding a Vee butt joint</li> <li>▪ Welding a vertical T fillet joint</li> </ul>						
<b>Specifications:</b> Material – 6 off 150 x 50 x 5mm thick mild steel plate Electrodes – <b>10</b> sticks of 3.25mm dia. mild steel electrodes						

Examiner`s comments:

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## TASK 21: 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: <ul style="list-style-type: none"> <li>Welding on a butt joint</li> <li>Welding on a lap joint</li> <li>Welding on a T fillet</li> <li>Welding on a corner joint</li> </ul>						
<b>Specifications:</b> 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:

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## TASK 22: PERFORM ARC WELDING OF CAST IRON

Activity/Operation						
	Satisfactory			Not Satisfactory		
	1	2	3	1	2	3
During observation of work activities, the candidates demonstrated that they can:						
(a) Weld a bead on a piece of cast iron. This could include: <ul style="list-style-type: none"> <li>Using arc welding machine to run stringer bead of 100mm in length on cast iron without defects.</li> </ul>						

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## TASK 23: 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: <ul style="list-style-type: none"> <li>- Constructing angles e.g. <math>45^{\circ}</math>, <math>90^{\circ}</math> and <math>60^{\circ}</math></li> <li>- Constructing plain figures i.e. (circles, polygons, arc centres).</li> </ul>						

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## TASK 24: DEVELOP AND FABRICATE A CYLINDER

Activity	Satisfactory			Not Satisfactory		
	1	2	3	1	2	3
During observation of work activities, the candidates demonstrated that they can:						
(a) Develop and fabricate a cylinder as per given specifications. This could include: <ul style="list-style-type: none"> <li>○ Drawing the elevation and plan of the cylinder</li> <li>○ Developing a full pattern of the cylinder using parallel line method</li> <li>○ Cutting out the template for the cylinder</li> <li>○ Tracing the template on already rolled pipes</li> <li>○ Cutting using appropriate cutting machine</li> </ul>						
<b>Specifications:</b> <ul style="list-style-type: none"> <li>- Cylinder height 100mm</li> <li>- Pipe diameter 100mm nominal bore</li> </ul> <b>Material list:</b> <ul style="list-style-type: none"> <li>- Template paper x01</li> <li>- Rolled pipe nominal bore 100mm and length 110mm, mild steel</li> <li>- One 9" cutting disc</li> </ul>						

Examiner's comments:

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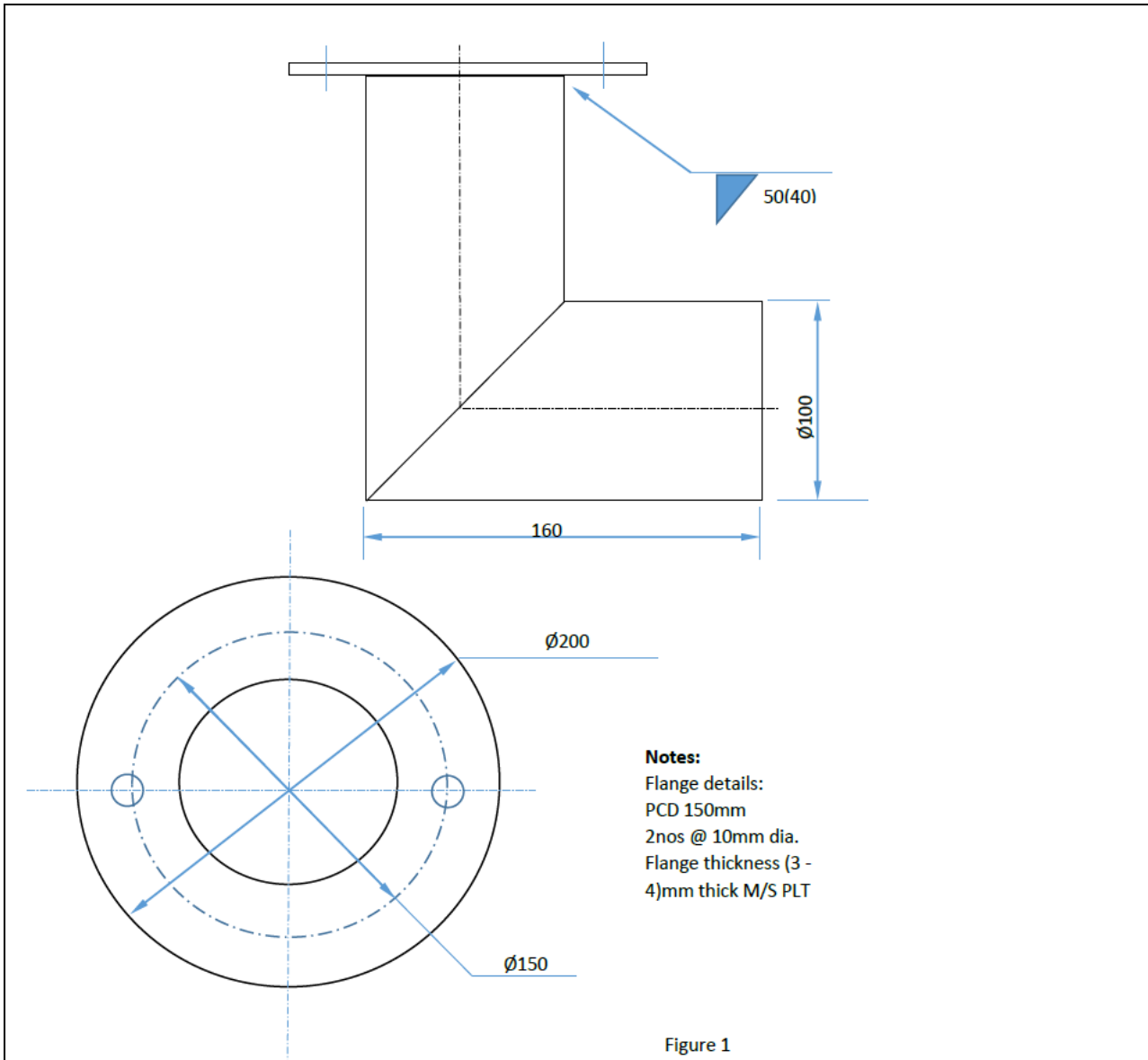
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## TASK 25: DEVELOP AND FABRICATE RIGHT CYLINDRICAL ELBOW

Activity/Operation						
	Satisfactory			Not Satisfactory		
	1	2	3	1	2	3
During observation of work activities, the candidates demonstrated that they can:						
(a) Develop and fabricate a right cylindrical elbow as shown in figure 1 below. This could include: <ul style="list-style-type: none"> <li>▪ Drawing the elevation of an elbow</li> <li>▪ Developing a full pattern of the elbow</li> <li>▪ Cutting out the template for the piece</li> <li>▪ Tracing the template on already rolled pipes</li> <li>▪ Cutting using appropriate cutting machine</li> <li>▪ Fitting on one of the ends, a flange with two holes.</li> </ul>						
<b>Specifications:</b> <ul style="list-style-type: none"> <li>• Material profile: 1 off 100mm nominal bore mild steel rolled pipe and length 330mm.</li> <li>• Electrodes: 5 sticks 3.25mm dia. mild steel</li> <li>• Flange: 1 off 200 x 200 x 4mm mild steel plate</li> <li>• One 9" cutting disc</li> <li>• Template paper</li> <li>• 10mm dia. drill bit.</li> </ul>						



Examiner`s comments:

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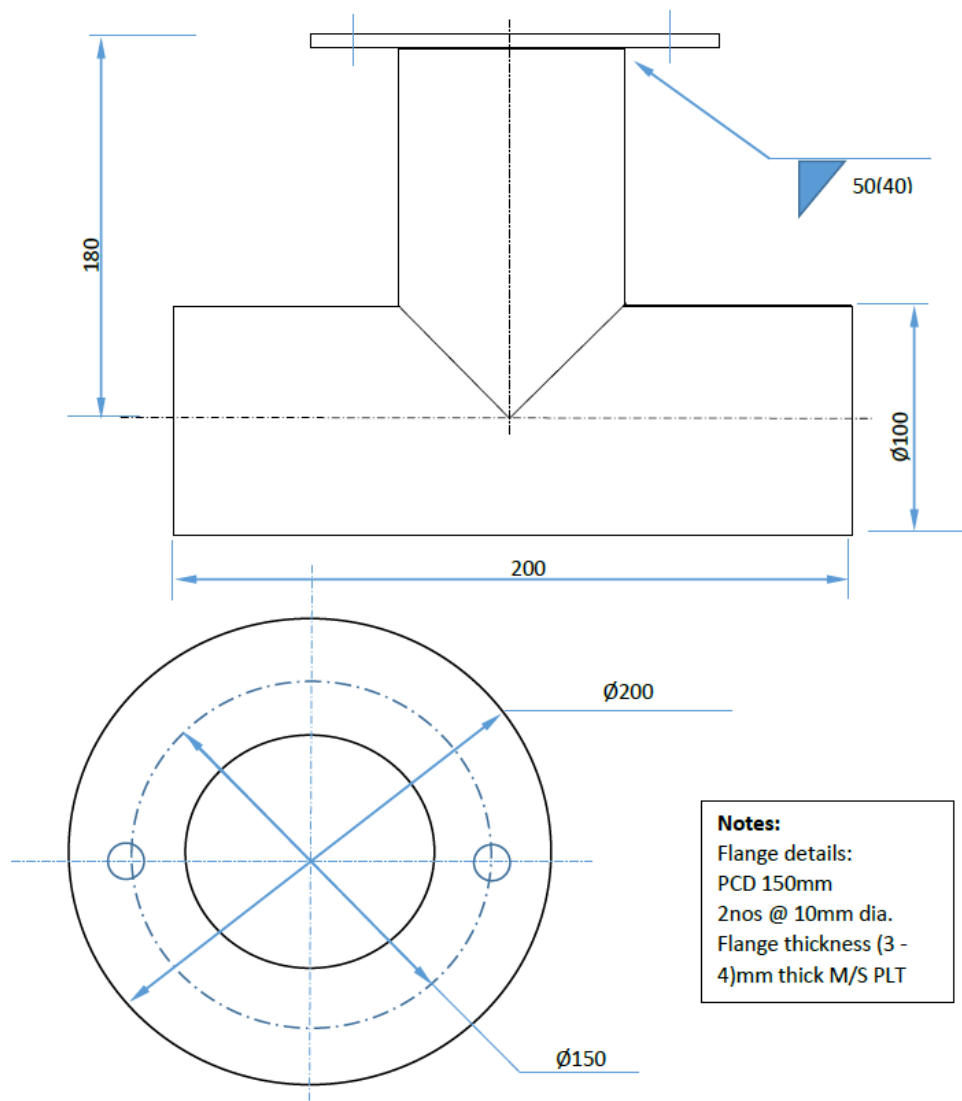
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## TASK 26: DEVELOP AND FABRICATE RIGHT ANGLED TEE OF EQUAL DIAMETER PIPES

Activity/Operation						
	Satisfactory			Not Satisfactory		
	1	2	3	1	2	3
During observation of work activities, the candidates demonstrated that they can:						
(a) Develop and fabricate a right angled Tee piece of equal diameter pipes as shown in figure 1 below. This could include: <ul style="list-style-type: none"> <li>▪ Drawing the elevation of a Tee piece</li> <li>▪ Developing full patterns of both main and branch pipes</li> <li>▪ Cutting out the templates for the pieces</li> <li>▪ Tracing the templates on already rolled pipes</li> <li>▪ Cutting the material to size</li> <li>▪ Assembling the two pieces into a Tee</li> <li>▪ Fitting on one of the ends, a flange with two holes on centre.</li> </ul>						
Specifications: <ul style="list-style-type: none"> <li>• Material profile: 1 off 100mm nominal bore mild steel rolled pipe and length 400mm.</li> <li>• Electrodes: 5 sticks 3.25mm dia. mild steel</li> <li>• Flange: 1 off 200 x 200 x 4mm mild steel plate</li> <li>• One 9" cutting disc</li> <li>• Template paper</li> <li>• 10mm dia. drill bit.</li> </ul>						



Examiner`s comments:

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## TASK 27: DEVELOP AND FABRICATE A RIGHT CONE

Activity/Operation	Satisfactory			Not Satisfactory		
	1	2	3	1	2	3
During observation of work activities, the candidates demonstrated that they can:						
(a) Develop and fabricate a right cone as per specifications below. This could include: <ul style="list-style-type: none"> <li>▪ Drawing the elevation and plan of the cone</li> <li>▪ Developing a full pattern of the cone using radial line method</li> <li>▪ Cutting out the template for the cone</li> <li>▪ Tracing the template</li> <li>▪ Cutting the material to size</li> <li>▪ Fabricating the cone</li> </ul>						
<b>Specifications:</b> Specifications: <ul style="list-style-type: none"> <li>• Height of cone 150mm and diameter 120mm</li> <li>• Material profile: 1 off 400 x 200 x 2mm thick plate mild steel.</li> <li>• Electrodes: 2 sticks 2.25mm dia. mild steel</li> <li>• One 9" cutting disc</li> <li>• Template paper</li> </ul>						

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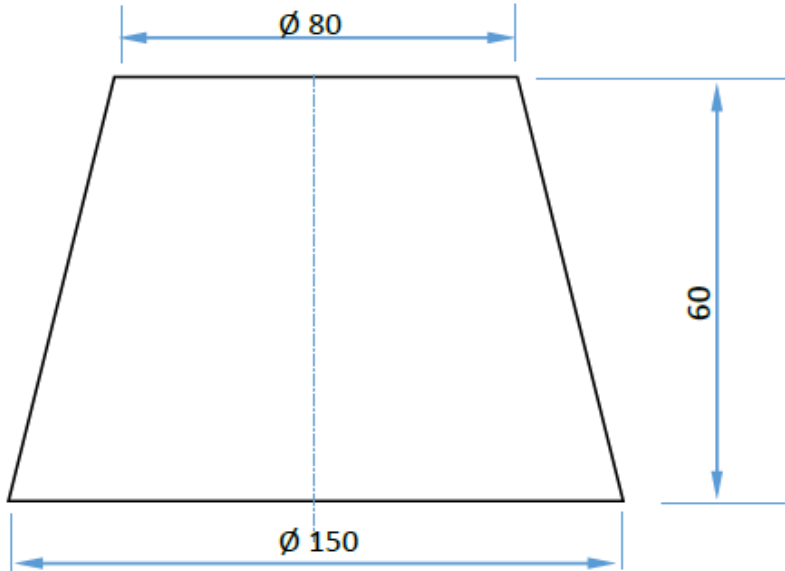


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## TASK 28: DEVELOP AND FABRICATE A RIGHT CONIC FRUSTUM

Activity/Operation	Satisfactory			Not Satisfactory		
	1	2	3	1	2	3
	1	2	3	1	2	3
During observation of work activities, the candidates demonstrated that they can:						
<p>(a) Develop and fabricate a right conic frustum as shown in figure 1 below. This could include:</p> <ul style="list-style-type: none"> <li>• Drawing the elevation and plan of the conic frustum.</li> <li>• Developing a full pattern of the frustum using appropriate method.</li> <li>• Cutting out the template for the frustum using standard procedures.</li> <li>• Tracing the template on the material.</li> <li>• Cutting out the material</li> <li>• Fabricating the conic frustum.</li> </ul>						
<p><b>Specifications:</b></p> <ul style="list-style-type: none"> <li>• Material profile: 1 off 480 x 120 x 2mm thick mild steel plate</li> <li>• Electrodes: 5 sticks 3.25mm dia. mild steel</li> <li>• One 9" cutting disc</li> <li>• Template paper</li> </ul>						
 <p style="text-align: right;">FIGURE 1</p>						

Examiner`s comments:

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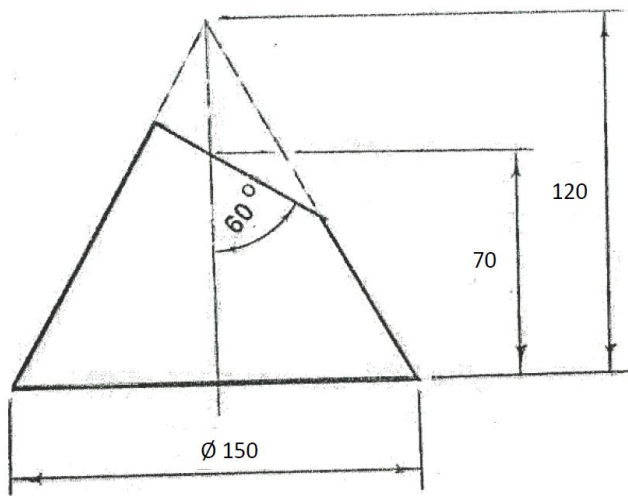
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## TASK 29: DEVELOP AND FABRICATE A RIGHT CONE CUT AT AN ANGLE

Activity	Satisfactory			Not Satisfactory		
	1	2	3	1	2	3
	1	2	3	1	2	3
During observations of work activities, the candidates demonstrated that they can:						
(a) Develop and fabricate a right cone cut at an angle as shown in figure 1 below: This could include: <ul style="list-style-type: none"> <li>▪ Drawing the elevation and plan of the truncated cone cut obliquely as shown</li> <li>▪ Developing a full pattern of the cone shown</li> <li>▪ Cutting out the template for the cone shown</li> <li>▪ Tracing the template</li> <li>▪ Fabricating the truncated cone</li> </ul>						
Specifications: <ul style="list-style-type: none"> <li>• Material profile: 1 off 480 x 200 x 2mm thick mild steel plate.</li> <li>• Electrodes: 2 sticks 2.5mm dia. mild steel</li> <li>• Flange: 1 off 200 x 200 x 4mm mild steel plate</li> <li>• One 9" cutting disc</li> <li>• Template paper</li> </ul>						
 <p style="text-align: center;"><b>FIGURE 1</b></p>						



Examiner`s comments:

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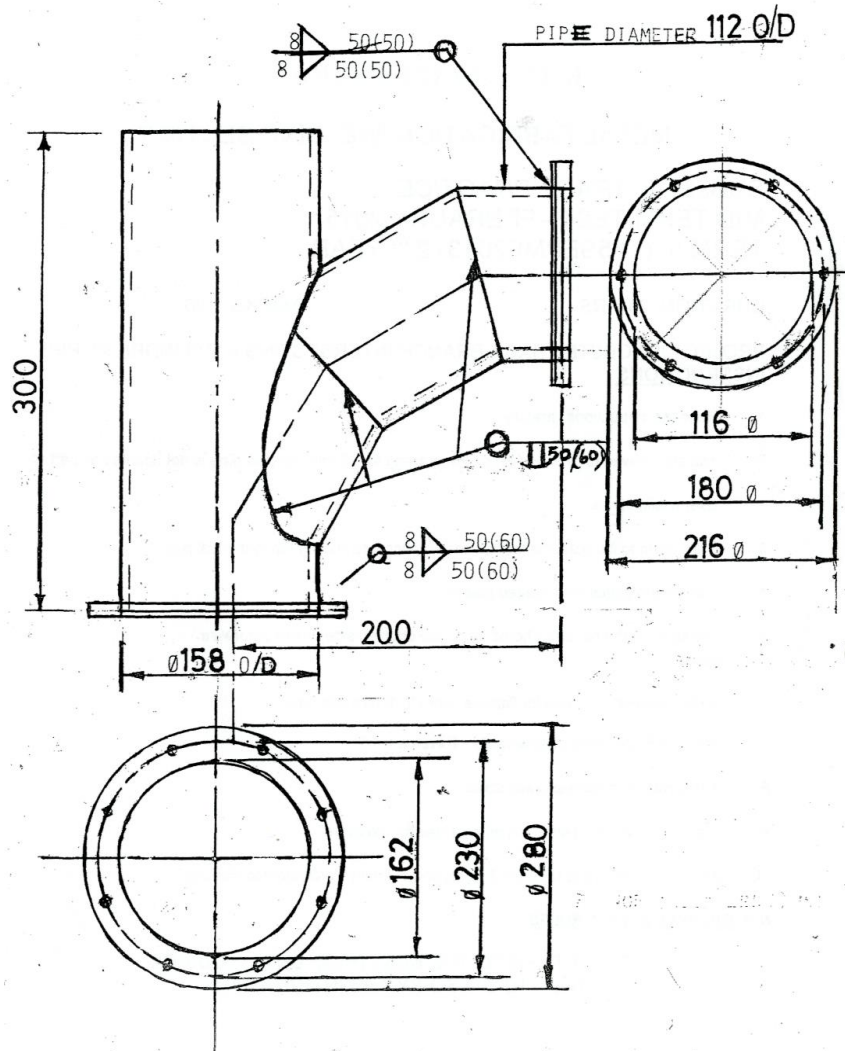
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## TASK 30: PERFORM BLUE PRINT READING

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:						
<ul style="list-style-type: none"> <li>- Interpreting engineering drawings</li> <li>- 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.</li> </ul>						



**FIGURE 2**

Examiner`s comments:

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## FINAL PRACTICAL ASSESSMENT SUMMARY

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

<b>15. SELECTION AND STORAGE OF ELECTRODES</b>	<input type="checkbox"/>	<input type="checkbox"/>
<b>16. PERFORM STRIKING AN ARC USING ELECTRIC ARC WELDING MACHINE</b>	<input type="checkbox"/>	<input type="checkbox"/>
<b>17. RUN CONTINUOUS WELD BEADS</b>	<input type="checkbox"/>	<input type="checkbox"/>
<b>18. WELD IN FLAT POSITION</b>	<input type="checkbox"/>	<input type="checkbox"/>
<b>19. WELD IN HORIZONTAL POSITION</b>	<input type="checkbox"/>	<input type="checkbox"/>
<b>20. PERFORM ARC WELDING IN VERTICAL POSITION</b>	<input type="checkbox"/>	<input type="checkbox"/>
<b>21. CARRY OUT WELDING IN OVERHEAD POSITION</b>	<input type="checkbox"/>	<input type="checkbox"/>
<b>22. PERFORM ARC WELDING OF CAST IRON</b>	<input type="checkbox"/>	<input type="checkbox"/>
<b>23. CONSTRUCTION OF BASIC ANGLES AND PLAIN FIGURES</b>	<input type="checkbox"/>	<input type="checkbox"/>
<b>24. DEVELOP AND FABRICATE A CYLINDER</b>	<input type="checkbox"/>	<input type="checkbox"/>
<b>25. DEVELOP AND FABRICATE RIGHT CYLINDRICAL ELBOW</b>	<input type="checkbox"/>	<input type="checkbox"/>
<b>26. DEVELOP AND FABRICATE RIGHT ANGLED TEE OF EQUAL DIAMETER PIPES</b>	<input type="checkbox"/>	<input type="checkbox"/>
<b>27. DEVELOP AND FABRICATE A RIGHT CONE</b>	<input type="checkbox"/>	<input type="checkbox"/>
<b>28. DEVELOP AND FABRICATE A RIGHT CONIC FRUSTUM</b>	<input type="checkbox"/>	<input type="checkbox"/>
<b>29. DEVELOP AND FABRICATE A RIGHT CONE CUT AT AN ANGLE</b>	<input type="checkbox"/>	<input type="checkbox"/>



## 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:

