

Assessment Evidence Guide

For

“Dies and Mould Technology”

Level-3

Perform Welding Operations
(Formative Assessment)

1st -5th March 2021



**National Vocational & Technical
Training Commission**

Title of Qualification: National Vocational Certificate Level 3, in (Dies and Mould Technology) "CNC Machinist"	CS Code:	Level: 3	Version: 01
Competency Standard Title: Perform Welding Operations Identify and implement Workplace Policies and Procedures Apply work health and safety practices (WHS) Communicate at workplace	Assessment Date (DD/MM/YY): Assessment Time: 3 Hours		

Candidate Details	Name: Registration/Roll Number:.....
Guidance for Candidate	To meet this standard, you are required to complete the following within the given time frame (for practical demonstration & assessment): Assessment Task 1: Candidate is required to perform following Oxy Acetylene operations on workpiece according to the requirement: ○ Welding ○ Cutting Assessment Task 2: Candidate is required to perform Shielded Metal Arc Welding (SMAW) on workpiece according to the requirement Assessment Task 3: Candidate is required to perform Gas Tungsten Arc Welding (GTAW) on workpiece according to the requirement Assessment Task 4: Candidate is required to perform Gas Metal Arc Welding (GMAW) on workpiece according to the requirement Assessment Task 5: Candidate is required to perform Soldering Operation on workpiece according to the requirement Assessment Task 6: Candidate is required to perform Brazing Operation on workpiece according to the requirement And complete: 1. Knowledge assessment test (Written or Oral) 2. Portfolios at the time of assessment (if any)
Minimum Evidence Required	During a practical assessment, under observation by an assessor, you will complete: Assessment Task 1 Performance Criteria 1:Check pressure from gauges on Oxygen and Acetylene cylinder Performance Criteria 2:Check gas manifold system Performance Criteria 3:Open Acetylene gas valve slightly and light the torch with spark lighter Performance Criteria 4:Open oxygen gas valve slightly to balance the both gases as

	per requirement of flame: • Produce oxidizing flame • Produce neutral flame • Produce carburising flame Performance Criteria 5: Take work pieces as per drawing Performance Criteria 6: Grind the work pieces on grinding machine to prepare the edges flat and parallel to each other Performance Criteria 7: Place the Bottom piece on work table and place the top plate along the marked line Performance Criteria 8: Set the flame of welding torch as per standard Performance Criteria 9: Complete the bead as per standard Performance Criteria 10: Take work pieces as per drawing Performance Criteria 11: Perform layout marking on workpiece for cutting as per requirement Performance Criteria 12: Set the flame of welding torch in oxidizing flame as per standard Performance Criteria 13: Start cutting of work piece while maintaining standard distance between welding torch nozzle and work piece Performance Criteria 14: Complete the cut as per requirement Performance Criteria 15: Carry out finishing work of welds following standard procedures Performance Criteria 16: Inspect weld visually and mark any visual defects, as required Performance Criteria 17: Carry out repair work in accordance with approved procedures, as required Performance Criteria 18: Clean work area in accordance with workplace safety practices Performance Criteria 19: Maintain and store tools/equipment/consumable materials in accordance with organization guidelines Performance Criteria 20: Identify the workplace policy & procedures Performance Criteria 21: Assess and control risks according to own level of responsibility, in line with workplace procedures
--	---

	Assessment Task 2 Performance Criteria 1: Adjust welding parameters (current, voltage etc.) as per welding procedure specifications/job requirement to produce acceptable weld Performance Criteria 2: Maintain gap between electrode and base metal as per standard practices Performance Criteria 3: Carry out welding as per given metal properties. Performance Criteria 4: Deposit root pass as per welding procedure specifications/job requirements Performance Criteria 5: Deposit filling passes as per welding procedure specifications/job requirements Performance Criteria 6: Deposit capping pass as per welding procedure specifications/job requirements Performance Criteria 7: Check root, filling and capping passes for any visual discontinuities as per acceptance standards Performance Criteria 8: Follow applicable manufacturing codes and standards for acceptance criteria of visual welding defects Performance Criteria 9: Apply appropriate strategies that can be used to measure whether your workplace health and safety obligations are being met Performance Criteria 10: Use various media to communicate effectively
	Assessment Task 3 Performance Criteria 1: Adjust welding parameters (current, voltage etc.) as per welding procedure specifications/job requirements to produce acceptable weld Performance Criteria 2: Maintain gap between electrode and base metal as per standard practices Performance Criteria 3: Carry out welding in Vertical (3F) and Vertical (3G) positions following standard procedures Performance Criteria 4: Deposit root pass as per welding procedure specifications/job requirements Performance Criteria 5: Deposit filling passes as per welding procedure specifications/job requirements Performance Criteria 6: Deposit capping pass as per welding procedure specifications/job requirements Performance Criteria 7: Check root, filling and capping passes for any visual discontinuities as per acceptance standards Performance Criteria 8: Follow applicable manufacturing codes and standards for acceptance criteria of visual welding defects Performance Criteria 9: Communicate procedures to help implement workplace

	policy Performance Criteria 10: Communicate orally and written
	Assessment Task 4 Performance Criteria 1: Adjust welding parameters (current, voltage, wire feed speed etc.) as per welding procedure specifications/job requirements to produce acceptable weld Performance Criteria 2: Maintain gap between electrode and base metal as per standard practices Performance Criteria 3: Carry out welding in Vertical (3F) and Overhead (4F) positions following standard procedures Performance Criteria 4: Follow applicable manufacturing codes and standards for acceptance criteria of visual welding defects Performance Criteria 5: Comply with duty of care requirements
	Assessment Task 5 Performance Criteria 1: Perform marking as per drawing Performance Criteria 2: Cut the metal sheet according to drawing using shearing machine Performance Criteria 3: Straighten the material with help of hammer Performance Criteria 4: File work if required Performance Criteria 5: Perform soldering operation as per standard Performance Criteria 6: Use personal protective equipment according to safe work practices
	Assessment Task 6 Performance Criteria 1: Perform marking as per drawing Performance Criteria 2: Cut the metal sheet according to drawing using shearing machine Performance Criteria 3: Straighten the material with help of hammer Performance Criteria 4: File work if required Performance Criteria 5: Open gas cylinder with the help of cylinder key Performance Criteria 6: Adjust pressure of both gas cylinders with the help of regulator Performance Criteria 7: Select the correct size of the nozzle Performance Criteria 8: Set flame to carburizing flame as per standard Performance Criteria 9: Use copper filler rod as filler metal Performance Criteria 10: Perform brazing as per standard Performance Criteria 11: Identify hazards or WHS issues in the workplace to relevant personnel

Assessors Judgment Guide (to be completed by the Assessor and signed both by the assessor and the candidate after the assessment)

Candidate Details	Name: Registration/Roll Number: Candidate Signature:
Assessment Outcome	COMPETENT ☐ NOT YET COMPETENT ☐ Name of the Assessor: Assessor's code: Signature of the Assessor:

Assessment Summary (to be filled by the assessor)							
Activity	Method					Result	
Nature of Activity	Written	Oral	Observation	Portfolio	Role Play	Competent	Not Yet Competent
Practical Skill Demonstration			✓				
Knowledge Assessment	✓	✓					
Other Requirement							

Each Assessment Task (with performance criteria)				
Assessment Task 1		Description of assessment task 1 Candidate is required to perform following Oxy Acetylene operations on workpiece according to the requirement: ○ Welding ○ Cutting		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Check pressure from gauges on Oxygen and Acetylene cylinder			
2.	Check gas manifold system			
3.	Open Acetylene gas valve slightly and light the torch with spark lighter			
4.	Open oxygen gas valve slightly to balance the both gases as per requirement of flame: • Produce oxidizing flame • Produce neutral flame • Produce carburizing flame			
5.	Take work pieces as per drawing			
6.	Grind the work pieces on grinding machine to prepare the edges flat and parallel to each other			
7.	Place the Bottom piece on work table and place the top plate along the marked line			
8.	Set the flame of welding torch as per standard			
9.	Complete the bead as per standard			
10.	Take work pieces as per drawing			
11.	Perform layout marking on workpiece for cutting as per requirement			
12.	Set the flame of welding torch in oxidizing flame as per standard			
13.	Start cutting of work piece while maintaining standard distance between welding torch nozzle and work piece			
14.	Complete the cut as per requirement			
15.	Carry out finishing work of welds following standard procedures			
16.	Inspect weld visually and mark any visual defects, as required			
17.	Carry out repair work in accordance with approved procedures, as required			
18.	Clean work area in accordance with workplace safety			

	practices			
19.	Maintain and store tools/equipment/consumable materials in accordance with organization guidelines			
20.	Identify the workplace policy & procedures			
21.	Assess and control risks according to own level of responsibility, in line with workplace procedures			
Competent ☐		Not Yet Competent ☐		

Assessment Task 2		Description of assessment task 2 Candidate is required to perform Shielded Metal Arc Welding (SMAW) on workpiece according to the requirement		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Adjust welding parameters (current, voltage etc.) as per welding procedure specifications/job requirement to produce acceptable weld			
2.	Maintain gap between electrode and base metal as per standard practices			
3.	Carry out welding as per given metal properties			
4.	Deposit root pass as per welding procedure specifications/job requirements			
5.	Deposit filling passes as per welding procedure specifications/job requirements			
6.	Deposit capping pass as per welding procedure specifications/job requirements			
7.	Check root, filling and capping passes for any visual discontinuities as per acceptance standards			
8.	Follow applicable manufacturing codes and standards for acceptance criteria of visual welding defects			
9.	Apply appropriate strategies that can be used to measure whether your workplace health and safety obligations are being met			
10.	Use various media to communicate effectively			
Competent ☐		Not Yet Competent ☐		

Assessment Task 3		Description of assessment task 3 Candidate is required to perform Gas Tungsten Arc Welding (GTAW) on workpiece according to the requirement		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Adjust welding parameters (current, voltage etc.) as per welding procedure specifications/job requirements to produce acceptable weld			
2.	Maintain gap between electrode and base metal as per standard practices			
3.	Carry out welding in Vertical (3F) and Vertical (3G) positions following standard procedures			
4.	Deposit root pass as per welding procedure specifications/job requirements			
5.	Deposit filling passes as per welding procedure specifications/job requirements			
6.	Deposit capping pass as per welding procedure specifications/job requirements			
7.	Check root, filling and capping passes for any visual discontinuities as per acceptance standards			
8.	Follow applicable manufacturing codes and standards for acceptance criteria of visual welding defects			
9.	Communicate procedures to help implement workplace policy			
10.	Communicate orally and written			
Competent ☐		Not Yet Competent ☐		

Assessment Task 4		Description of assessment task 4 Candidate is required to perform Gas Metal Arc Welding (GMAW)) on workpiece according to the requirement		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Adjust welding parameters (current, voltage, wire feed speed etc.) as per welding procedure specifications/job requirements to produce acceptable weld			
2.	Maintain gap between electrode and base metal as per standard practices			
3.	Carry out welding in Vertical (3F) and Overhead (4F) positions following standard procedures			
4.	Follow applicable manufacturing codes and standards for acceptance criteria of visual welding defects			
5.	Comply with duty of care requirements			
Competent ☐		Not Yet Competent ☐		

Assessment Task 5		Description of assessment task 5 Candidate is required to perform Soldering Operation on workpiece according to the requirement		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Perform marking as per drawing			
2.	Cut the metal sheet according to drawing using shearing machine			
3.	Straighten the material with help of hammer			
4.	File work if required			
5.	Perform soldering operation as per standard			
6.	Use personal protective equipment according to safe work practices			
Competent ☐		Not Yet Competent ☐		

Assessment Task 6		Description of assessment task 6 Candidate is required to perform Brazing Operation on workpiece according to the requirement		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Perform marking as per drawing			
2.	Cut the metal sheet according to drawing using shearing machine			
3.	Straighten the material with help of hammer			
4.	File work if required			
5.	Open gas cylinder with the help of cylinder key			
6.	Adjust pressure of both gas cylinders with the help of regulator			
7.	Select the correct size of the nozzle			
8.	Set flame to carburizing flame as per standard			
9.	Use copper filler rod as filler metal			
10.	Perform brazing as per standard			
11.	Identify hazards or WHS issues in the workplace to relevant personnel			
Competent ☐		Not Yet Competent ☐		