

# Assessment Evidence Guide

## For

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Level-4

**Module name**  
(Formative Assessment)

*8<sup>th</sup> -12<sup>th</sup> March 2021*



**National Vocational & Technical  
Training Commission**

<b>Title of Qualification:</b> Metallography Technician-I	CS Code:	Level: 4	Version: 01
<b>Competency Standard Title:</b> Perform Sectioning, Cutting and Rough Grinding	<b>Assessment Date (DD/MM/YY):</b>  <b>Assessment Time:</b>		

Candidate Details	Name: .....  Registration/Roll Number:.....
Guidance for Candidate	<p><b>To meet this standard, you are required to complete the following within the given time frame (for practical demonstration &amp; assessment):</b></p> <p><b>Assessment Task 1:</b> Candidate is required to: Perform labeling, and marking</p> <p><b>Assessment Task 2:</b> Candidate is required to: Perform Sectioning &amp; Cutting Operation</p> <p><b>Assessment Task 3:</b> Candidate is required to: Perform Rough Grinding Operation</p> <p><b>And complete:</b></p> <ol style="list-style-type: none"> <li><b>1. Knowledge assessment test (Written or Oral)</b></li> <li><b>2. Portfolios at the time of assessment (if any)</b></li> </ol>
Minimum Evidence Required	<p><b>During a practical assessment, under observation by an assessor, you will complete:</b></p> <p><b>Assessment Task 1</b></p> <p><b>P1.</b> Label the identification number to recognize specimen identity.</p> <p><b>P2.</b> Perform proper documentation with date &amp; time in log book.</p> <p><b>P3.</b> Record the initial conditions of Specimen.</p> <p><b>P4.</b> Use the measuring tool for marking.</p> <p><b>P5.</b> Mark the cutting area with permanent marker, to be sectioned or cut.</p>

	<p><b>Assessment Task 2</b></p> <p><b>P1.</b> Adopt standard safety practice and procedure for handling sectioning operation.</p> <p><b>P2.</b> Gripe the specimen area of interest, which will be easier in handling during grinding and polishing.</p> <p><b>P3.</b> Select of the abrasive blade depend upon material type.</p> <p><b>P4.</b> Identify proper cutting requirement and the correct selection of abrasive type, bonding, and size; as well as proper cutting speed, load and coolant.</p> <p><b>P5.</b> The sectioning operation can be obtained by abrasive cutting (metals and metal matrix composites), diamond wafer cutting (ceramics, electronics, biomaterials, minerals), or thin sectioning with a microtome (plastics).</p>
	<p><b>Assessment Task 3</b></p> <p><b>P1.</b> Adopt standard safety practice and procedure for handling rough grinding operation.</p> <p><b>P2.</b> Select of the abrasive blade depend upon material type.</p> <p><b>P3.</b> Gripe the specimen in hands then place on abrasive wheel.</p> <p><b>P4.</b> Remove the sharp edges and corner of specimen.</p>
	<p><b>Portfolios required at the time of assessment (if any) for</b></p>

*Continued on following page*

**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 <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/> 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		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
	Label the identification number to recognize specimen identity.			
	Perform proper documentation with date & time in logbook.			
	Record the initial conditions of Specimen.			
	Use the measuring tool for marking.			
	Mark the cutting area with permanent marker, to be sectioned or cut.			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 2		Description of assessment task 2		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
	Adopt standard safety practice and procedure for handling sectioning operation.			
	Gripe the specimen area of interest, which will be easier in handling during grinding and polishing.			
	Select of the abrasive blade depend upon material type.			
	Identify proper cutting requirement and the correct selection of abrasive type, bonding, and size; as well as proper cutting speed, load and coolant.			
	The sectioning operation can be obtained by abrasive cutting (metals and metal matrix composites), diamond wafer cutting (ceramics, electronics, biomaterials, minerals), or thin sectioning with a microtome (plastics).			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Each Assessment Task (with performance criteria)			
<b>Assessment Task 3</b>		<b>Description of assessment task 3</b>	
During the practical assessment, candidate demonstrated the following:		Yes	No
	Adopt standard safety practice and procedure for handling rough grinding operation.		
	Select of the abrasive blade depend upon material type.		
	Gripe the specimen in hands then place on abrasive wheel.		
	Remove the sharp edges and corner of specimen.		
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>	

<b>Title of Qualification: Metallography Technician-I</b>	CS Code:	Level:	Version: 01
<b>Competency Standard Title: Perform Sectioning, Cutting and Rough Grinding</b>	<b>Assessment Date (DD/MM/YY):</b>  <b>Assessment Time: 30 min</b>		

Guidance for Candidate	<b>To complete your assessment for this Competency Standard, you need to answer the questions on the following pages successfully.</b>
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**Assessors 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: .....
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Written Assessment Outcome	COMPETENT <input type="checkbox"/>	NOT YET COMPETENT <input type="checkbox"/>
	Name of the Assessor: ..... Assessor's code:	
	Signature of the Assessor: .....	



<b>Title of Qualification: Metallography Technician-I</b>	<b>CS Code:</b>	<b>Level:4</b>	<b>Version:</b> 01
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#### WRITTEN ASSESSMENT

<b>Question</b>	<b>Candidate's answer</b>
Define purpose of labeling and documentation.	<ul style="list-style-type: none"> <li>• Sample identification</li> <li>• Tracking sample</li> </ul>
Purpose of safety symbols for acid chemical.	<ul style="list-style-type: none"> <li>• Protection</li> <li>• Miss use</li> </ul>
What are sectioning techniques	<ul style="list-style-type: none"> <li>• By Hand Saw</li> <li>• IsoMat</li> </ul>
Define General marking.	<ul style="list-style-type: none"> <li>• Identify cutting Area</li> <li>• Area for microscopic Analysis</li> </ul>
Define fine rough grinding.	<ul style="list-style-type: none"> <li>• Remove Sharp edges</li> <li>• Remove excessive Fins</li> <li>• Surface leveling</li> </ul>
Define cutting materials	<ul style="list-style-type: none"> <li>• Remove required area</li> <li>• For easier handling</li> </ul>

Question	Candidate's answer