

Assessment Evidence Guide

For

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Level-4

Module name
(Formative Assessment)

8th -12th March 2021



**National Vocational & Technical
Training Commission**

Title of Qualification: Metallography Technician-I	CS Code:	Level: 4	Version: 01
Competency Standard Title: Perform Fine Grinding Operation	Assessment Date (DD/MM/YY): Assessment Time:		

Candidate Details	Name: Registration/Roll Number:.....
Guidance for Candidate	<p>To meet this standard, you are required to complete the following within the given time frame (for practical demonstration & assessment):</p> <p>Assessment Task 1: Candidate is required to: Perform Fine Grinding on Handy Met</p> <p>Assessment Task 2: Candidate is required to: Perform Grinding on semi/ fully automatic machine</p> <p>And complete:</p> <ol style="list-style-type: none"> 1. Knowledge assessment test (Written or Oral) 2. Portfolios at the time of assessment (if any)
Minimum Evidence Required	<p>During a practical assessment, under observation by an assessor, you will complete:</p> <p>Assessment Task 1</p> <p>P1. Adopt standard safety practice and procedure for handling.</p> <p>P2. Select the set of emery or abrasive paper according to their grit size.</p> <p>P3. Start grinding on paper from 60 to 1200 grit size.</p> <p>P4. Use water during grinding operation.</p> <p>P5. Rotate the specimen at 90 degree after short intervals in manual operation and continuously ground until the scratches from previous grinding direction are removed.</p> <p>P6. Replace paper on requirement.</p>

	<p>Assessment Task 2</p> <p>P1. Identify grinding material specifications (Grit number) according to metallographic standard and type of specimen.</p> <p>P2. Adopt standard safety practice and procedure for handling.</p> <p>P3. Attach or past the abrasive paper on grinding wheel of grinding machine. Grinding step is accomplished by decreasing the abrasive grit size (60 to 1200).</p> <p>P4. Open tape water to lubricating the grinding operation.</p> <p>P5. Rotate the specimen at 90 degree after short intervals in manual operation and continuously ground until the scratches from previous grinding direction are removed.</p> <p>P6. Thoroughly clean the specimen between each abrasive grit size in automated operation.</p> <p>P7. Change the abrasive paper if necessary.</p> <p>Portfolios required at the time of assessment (if any) for</p>
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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
	Adopt standard safety practice and procedure for handling.			
	Select the set of emery or abrasive paper according to their grit size.			
	Start grinding on paper from 60 to 1200 grit size.			
	Use water during grinding operation.			
	Rotate the specimen at 90 degree after short intervals in manual operation and continuously ground until the scratches from previous grinding direction are removed.			
	Replace paper on requirement.			
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
	Identify grinding material specifications (Grit number) according to metallographic standard and type of specimen.			
	Adopt standard safety practice and procedure for handling.			
	Attach or past the abrasive paper on grinding wheel of grinding machine. Grinding step is accomplished by decreasing the abrasive grit size (60 to 1200).			
	Open tap water to lubricating the grinding operation.			
	Rotate the specimen at 90 degree after short intervals in manual operation and continuously ground until the scratches from previous grinding direction are removed.			
	Thoroughly clean the specimen between each abrasive grit size in automated operation.			
	Change the abrasive paper if necessary.			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Title of Qualification: Metallography Technician-I	CS Code:	Level:	Version: 01
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Competency Standard Title: Perform Fine Grinding Operation	Assessment Date (DD/MM/YY): Assessment Time: 30 min
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Guidance for Candidate	To complete your assessment for this Competency Standard, you need to answer the questions on the following pages successfully.
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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:
Written Assessment Outcome	COMPETENT <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/> Name of the Assessor:Assessor's code: Signature of the Assessor:

Title of Qualification: Metallography Technician-I	CS Code:	Level:4	Version: 01
Competency Standard Title: Perform Fine Grinding Operation	Assessment Date (DD/MM/YY): Assessment Time: 30 min		

WRITTEN ASSESSMENT

Question	Candidate's answer
Define purpose of fine grinding in Metallography.	<ul style="list-style-type: none"> • Smooth surface • Bulge free surface • For further fine polishing
Explain fine grinding techniques	<ul style="list-style-type: none"> • Different grit number • Rough to Fine grit
Define General grit size ranges.	<ul style="list-style-type: none"> • 80-1500# • 80 rougher# • 1000 Finer #
Define grinding materials	<ul style="list-style-type: none"> • Silicon carbide • Aluminum oxides • Tungsten Carbide
Explain lubrication in fine grinding.	<ul style="list-style-type: none"> • Smoothness

Question	Candidate's answer