

# Assessment Evidence Guide

## For

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Level-5

**Module name**  
(Formative Assessment)

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



**National Vocational & Technical  
Training Commission**

<b>Title of Qualification:</b> Surface Coating Technician-II	CS Code:	Level: 5	Version: 01
<b>Competency Standard Title:</b>  <b>Perform Chemical Vapor Deposition Coatings (CVD)</b>	<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 cataloging and Cleaning Operation</p> <p><b>Assessment Task 2:</b> Candidate is required to: Perform Drying and Set up Jigs &amp; Fixture operation</p> <p><b>Assessment Task 3:</b> Candidate is required to: Perform Coating 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> Perform proper documentation of the initial conditions of Specimen and recognize its identity.</p> <p><b>P2.</b> Adopt standard safety practice and procedure for handling.</p> <p><b>P3.</b> Prepare job layout according to process requirements.</p> <p><b>P4.</b> Identify the Cleaning process as per requirement of standards.</p> <p><b>P5.</b> Adopt standard safety practice and procedure for chemical handling.</p> <p><b>P6.</b> Prepare degreasing cleaning solution where steel is treated with CCL4 solution which removes common dirt and oils.</p> <p><b>P7.</b> Place specimen in the solution for specific time in ultrasonic bath then remove and rinsing with water.</p> <p><b>P8.</b> Prepare chemical cleaning solution where the surface rust and scales</p>

	<p>are removed by using acetone solution.</p> <p><b>P9.</b> Place specimen in the solution for specific time in ultrasonic bath then remove and rinsing with water.</p> <p><b>P10.</b> Prepare cleaning solution where the surface oxides are removed by using cleano gel.</p> <p><b>P11.</b> Place specimen in the solution for specific time in ultrasonic bath with agitation then rising with water.</p> <p><b>P12.</b> Remove the specimen from bath and ready for next step.</p>
	<p><b>Assessment Task 2</b></p> <p><b>P1.</b> Place specimen in the tray.</p> <p><b>P2.</b> Switch on hot air dryer use for drying.</p> <p><b>P3.</b> Remove specimen after specific time for drying.</p> <p><b>P4.</b> Adjust fixtures according to specimen height.</p> <p><b>P5.</b> Adopt standard safety practice and procedure for handling process.</p> <p><b>P6.</b> Use standard holder or fixture for specimen.</p> <p><b>P7.</b> Hang the specimen in holders with S.S wires.</p> <p><b>P8.</b> Clean the Fixtures with cold compress air.</p> <p><b>P9.</b> Clamping and tightening the holders in fixtures.</p> <p><b>P10.</b> Lift the Carosole with lifter and place in chamber.</p>
	<p><b>Assessment Task 3</b></p> <p><b>P1.</b> Pre heat the chamber with open door at 120C for 30-60 min.</p> <p><b>P2.</b> Clean the door, chamber and Carosole with vacuum cleaner.</p> <p><b>P3.</b> Clean the door sealing with alcohol then apply vacuum sealing gel.</p> <p><b>P4.</b> Close the door of machine.</p> <p><b>P5.</b> Select the required recipe or parameters.</p> <p><b>P6.</b> Start the coating machine, coating time depends upon type and thickness of coating.</p> <p><b>P7.</b> After coating finished wait for cooling down of chamber.</p> <p><b>P8.</b> Open door and take out fixture with lifter.</p> <p><b>P9.</b> Clean the specimen with cold compress air.</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
	Perform proper documentation of the initial conditions of Specimen and recognize its identity.			
	Adopt standard safety practice and procedure for handling.			
	Prepare job layout according to process requirements.			
	Identify the Cleaning process as per requirement of standards.			
	Adopt standard safety practice and procedure for chemical handling.			
	Prepare degreasing cleaning solution where steel is treated with CCL4 solution which removes common dirt and oils.			
	Place specimen in the solution for specific time in ultrasonic bath then remove and rinsing with water.			
	Prepare chemical cleaning solution where the surface rust and scales are removed by using acetone solution.			
	Place specimen in the solution for specific time in ultrasonic bath then remove and rinsing with water.			
	Prepare cleaning solution where the surface oxides are removed by using cleano gel.			
	Place specimen in the solution for specific time in ultrasonic bath with agitation then rising with water.			
	Remove the specimen from bath and ready for			

	next step.			
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
	Place specimen in the tray.			
	Switch on hot air dryer use for drying .			
	Remove specimen after specific time for drying.			
	Adjust C plate length according to specimen height.			
	Adopt standard safety practice and procedure for handling process.			
	Use standard holder or fixture for specimen.			
	Hang the specimen in holders with S.S wires.			
	Clean the Carosole with cold compress air.			
	Clamping and tightening the holders in Carosole.			
	Lift the Carosole with lifter and place in chamber.			
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	Remarks
	Pre heat the chamber with open door at 120C for 30-60 min.			
	Clean the door, chamber and Carosole with vacuum cleaner.			
	Clean the door sealing with alcohol then apply vacuum sealing gel.			
	Close the door of machine.			
	Select the required recipe or parameters.			
	Start the coating machine, coating time depends upon type and thickness of coating.			
	After coating finished wait for cooling down of chamber.			
	Open door and take out Carosole with lifter.			
	Clean the specimen with cold compress air.			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

<b>Title of Qualification:</b> Surface Coating Technician-II	CS Code:	Level:	Version: 01
<b>Competency Standard Title:</b>  <b>Perform Chemical Vapor Deposition Coatings (CVD)</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: .....
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:</b> Surface Coating Technician-II	CS Code:	Level:4	Version: 01
<b>Competency Standard Title:</b> Perform Chemical Vapor Deposition Coatings (CVD)	<b>Assessment Date (DD/MM/YY):</b> <b>Assessment Time:</b> 30 min		

#### WRITTEN ASSESSMENT

Question	Candidate's answer
Define purpose of CVD coating.	<ul style="list-style-type: none"> <li>• Surface Protection</li> <li>• Corrosion protection</li> <li>• Long life</li> <li>• Wear resistance</li> </ul>
Why drying technique	<ul style="list-style-type: none"> <li>• Remove stain of water from surface</li> <li>•</li> </ul>
Define General coating thickness ranges	<ul style="list-style-type: none"> <li>• 10-20 Micron</li> </ul>
Define cleaning types.	<ul style="list-style-type: none"> <li>• Chemical</li> <li>• Mechanical</li> </ul>
Define CVD materials.	<ul style="list-style-type: none"> <li>• Cathodes</li> <li>• Anodes</li> <li>• Gases</li> </ul>
Explain CVD time and temperatures.	<ul style="list-style-type: none"> <li>• 4-8 hrs</li> <li>• 800-1000C°</li> </ul>