

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: Surface Coating Technician-I	CS Code:	Level: 4	Version: 01
Competency Standard Title: Conversion Coating (Anodizing)	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 cataloging and Cleaning Operation</p> <p>Assessment Task 2: Candidate is required to: Perform Solution Preparation and Set up Coating bath</p> <p>Assessment Task 3: Candidate is required to: Perform Coating and Drying Operation</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. Perform documentation of the initial conditions of Specimen and recognize its identity.</p> <p>P2. Adopt standard safety practice and procedure for handling.</p> <p>P3. Prepare job layout according to process requirements</p> <p>P4. Identify the cleaning process as per requirement of standards.</p> <p>P5. Adopt standard safety practice and procedure for chemical handling.</p> <p>P6. Select the specimen side or face, which will be coating.</p> <p>P7. Prepare degreasing cleaning solution where steel is treated with spirit solution which removes common dirt and oils.</p> <p>P8. Place specimen in the solution for specific time then remove and rinsing with water.</p> <p>P9. Prepare chemical cleaning solution where the surface rust and scales</p>

	<p>are removed by using alkaline solution.</p> <p>P10. Place specimen in the solution for specific time then remove and rinsing with water.</p> <p>P11. Prepare nitric acid solution where the surface oxides are removed.</p> <p>P12. Place specimen in the solution for specific time.</p> <p>P13. Remove the specimen from bath and ready for next step.</p>
	<p>Assessment Task 2</p> <p>P1. Take glass beaker or polythene tank.</p> <p>P2. Adopt standard safety practice and procedure for handling chemical process.</p> <p>P3. Filled half with distil or deionized water.</p> <p>P4. Add acid solution slowly and stir it.</p> <p>P5. Add prepared solution in the bath.</p> <p>P6. Adopt standard safety practice and procedure for handling process.</p> <p>P7. Place the lead sheets or plates on the opposite sides of bath. (Act as cathodes)</p> <p>P8. Connect the both lead plates to electric supply.</p> <p>P9. Place Ti rod or wood coiled with Al wire in the middle of bath. (Act as Anode)</p> <p>P10. Connect the bar to electric supply.</p> <p>P11. Arrange them in sequence and order don't touch each other.</p> <p>P12. Hang the specimen with wire to anode.</p>
	<p>Assessment Task 3</p> <p>P1. Identify anodizing specifications.</p> <p>P2. Adopt standard safety practice and procedure for handling process.</p> <p>P3. Switch on rectifier and adjust required current density.</p> <p>P4. Allow coating deposition for specific time.</p> <p>P5. Agitate the bath with air bubbles system.</p> <p>P6. Bath temperature should be maintain from 20-25C.</p> <p>P7. Switch off rectifier and remove specimen.</p> <p>P8. Place specimen in the drying oven.</p> <p>P9. Set temperature the switch on oven.</p> <p>P10. Remove specimen after specific time for drying.</p>

	Portfolios required at the time of assessment (if any) for
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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
	Perform 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.			
	Select the specimen side or face, which will be coating.			
	Prepare degreasing cleaning solution where steel is treated with spirit solution which removes common dirt and oils.			
	Place specimen in the solution for specific time then remove and rinsing with water.			
	Prepare chemical cleaning solution where the surface rust and scales are removed by using alkaline solution.			
	Place specimen in the solution for specific time then remove and rinsing with water.			
	Prepare nitric acid solution where the surface oxides are removed.			
	Place specimen in the solution for specific time.			
	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
	Take glass beaker or polythene tank.			
	Adopt standard safety practice and procedure for handling chemical process.			
	Filled half with distil or deionized water.			
	Add acid solution slowly and stir it.			
	Add prepared solution in the bath.			
	Adopt standard safety practice and procedure for handling process.			
	Place the lead sheets or plates on the opposite sides of bath. (Act as cathodes)			
	Connect the both lead plates to electric supply.			
	Place Ti rod or wood coiled with Al wire in the middle of bath. (Act as Anode)			
	Connect the bar to electric supply.			
	Arrange them in sequence and order don't touch each other.			
	Hang the specimen with wire to anode.			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Each Assessment Task (with performance criteria)				
Assessment Task 3		Description of assessment task 3		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
	Identify anodizing specifications.			
	Adopt standard safety practice and procedure for handling process.			
	Switch on rectifier and adjust required current density.			
	Allow coating deposition for specific time.			
	Agitate the bath with air bubbles system.			
	Bath temperature should be maintain from 20-25C.			
	Switch off rectifier and remove specimen.			
	Place specimen in the drying oven.			
	Set temperature the switch on oven.			
	Remove specimen after specific time for drying.			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Title of Qualification: Surface Coating Technician-I	CS Code:	Level:	Version: 01
Competency Standard Title: Conversion Coating (Anodizing)	Assessment Date (DD/MM/YY): Assessment Time: 30 min		

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: Surface Coating Technician-I	CS Code:	Level:4	Version: 01
Competency Standard Title: Conversion Coating (Anodizing)	Assessment Date (DD/MM/YY): Assessment Time: 30 min		

WRITTEN ASSESSMENT

Question	Candidate's answer
Define purpose of anodizing.	<ul style="list-style-type: none"> • Surface Protection • Corrosion protection • Long life
Why drying technique	<ul style="list-style-type: none"> • Remove stain from surface •
Define General coating thickness ranges	<ul style="list-style-type: none"> • 1.5- 25 Micron
Define cleaning types.	<ul style="list-style-type: none"> • Chemical • Mechanical
Define anodizing materials.	<ul style="list-style-type: none"> • Mixture of Chemical Solution • Anode • Cathode
Explain galvanizing time and temperatures.	<ul style="list-style-type: none"> • 15-25 mins • 20-25C°