

## Instruction Sheet for the Candidate

<b>Qualification</b>	<b>National Vocational Certificate in Metal Forming &amp; Processing Level 4</b>
<b>Competency Standard</b>	Perform Wire Drawing Process
<b>Purpose of Assessment</b>	<b>Formative Assessment</b>
<b>Candidate Details</b>	Name _____ Registration/Roll Number _____
<b>Guidance for Candidate</b>	<p><b>To meet this standard, you are required to complete the following within 04 Hrs. time frame (for practical demonstration &amp; assessment):</b></p> <ul style="list-style-type: none"> <li>• Arrange tools and equipment for wire drawing through draw plate</li> <li>• Perform Annealing of the given wire to be drawn</li> <li>• Carryout pulling of wire through drawplate</li> <li>• Perform wire drawing operation on metal blank</li> </ul>
<b>Time: 04 Hrs.</b>	During a practical assessment, under observation by an assessor, you are required to
<b>Minimum Evidence Required</b>	<p><b>Arrange tools and equipment for wire drawing through draw plate</b></p> <ul style="list-style-type: none"> <li>• Arrange the required tools and equipment required for the process</li> <li>• Arrange raw material wire for wire drawing process as per requirement</li> <li>• Select the required tools and equipment for wire drawing process</li> <li>• Inspect the working condition of tools and equipment</li> </ul> <p><b>Perform annealing of the given wire to be drawn</b></p> <ul style="list-style-type: none"> <li>• Heat the wire in the heating furnace up to required temperature</li> <li>• Set standard soaking time of the heat treatment furnace as per requirements</li> <li>• Stop the heating once the required temperature and soaking time is achieved.</li> <li>• Perform the cooling of raw material wire in furnace</li> </ul> <p><b>Carryout pulling of wire through drawplate</b></p> <ul style="list-style-type: none"> <li>• Install the draw plate as per standard</li> <li>• Fix the draw plate in the vise</li> <li>• Taper the proper length of the wire to be drawn</li> <li>• Lubricate the wire to be drawn</li> <li>• Select a hole in the draw plate slightly smaller than the diameter of raw material wire</li> <li>• Insert the taper end of wire in the back side of draw plate</li> <li>• Grasp the wire from the front of the plate with a draw tong or heavy</li> </ul>

	<p>duty pliers</p> <ul style="list-style-type: none"> <li>• Pull the wire through the plate</li> <li>• Maintain the constant speed to ensure the uniformity</li> <li>• Repeat the process with successively smaller holes until the desired diameter is achieved</li> </ul> <p><b>Perform wire drawing operation on metal blank</b></p> <ul style="list-style-type: none"> <li>• Prepare the metal blanks as per requirement</li> <li>• Check the property of Blank as per standards</li> <li>• Set number of Dies according to requirement.</li> <li>• Set the drawing load as per requirement</li> <li>• Pull the wire through the metal blank</li> <li>• Carry out wire drawing as per standard</li> <li>• Measure the diameter of wire and confirm it with requirements.</li> </ul>
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## Self-Assessment Checklist

<b>Candidate Name</b>	
<b>Registration No.</b>	
<b>Qualification</b>	<b>National Vocational Certificate in Metal Forming &amp; Processing Level 4</b>
<b>Competency Standard</b>	Perform Wire Drawing Process
<b>Purpose of Assessment</b>	<b>Formative Assessment</b>
<b>Assessment Task</b>	<ul style="list-style-type: none"> <li>• Arrange tools and equipment for wire drawing through draw plate</li> <li>• Perform Annealing of the given wire to be drawn</li> <li>• Carryout pulling of wire through drawplate</li> <li>• Perform wire drawing operation on metal blank</li> </ul>

I can.....

<b>Performance Criteria</b>	<b>Yes</b>	<b>No</b>
1. Arrange the required tools and equipment required for the process	<input type="checkbox"/>	<input type="checkbox"/>
2. Arrange raw material wire for wire drawing process as per requirement	<input type="checkbox"/>	<input type="checkbox"/>
3. Select the required tools and equipment for wire drawing process	<input type="checkbox"/>	<input type="checkbox"/>
4. Inspect the working condition of tools and equipment	<input type="checkbox"/>	<input type="checkbox"/>
5. Heat the wire in the heating furnace up to required temperature	<input type="checkbox"/>	<input type="checkbox"/>
6. Set standard soaking time of the heat treatment furnace as per requirements	<input type="checkbox"/>	<input type="checkbox"/>
7. Stop the heating once the required temperature and soaking time is achieved.	<input type="checkbox"/>	<input type="checkbox"/>
8. Perform the cooling of raw material wire in furnace	<input type="checkbox"/>	<input type="checkbox"/>
9. Install the draw plate as per standard	<input type="checkbox"/>	<input type="checkbox"/>
10. Fix the draw plate in the vise	<input type="checkbox"/>	<input type="checkbox"/>
11. Taper the proper length of the wire to be drawn	<input type="checkbox"/>	<input type="checkbox"/>
12. Lubricate the wire to be drawn	<input type="checkbox"/>	<input type="checkbox"/>
13. Select a hole in the draw plate slightly smaller than the diameter of raw material wire	<input type="checkbox"/>	<input type="checkbox"/>
14. Insert the taper end of wire in the back side of draw plate	<input type="checkbox"/>	<input type="checkbox"/>

15. Grasp the wire from the front of the plate with a draw tong or heavy duty pliers	<input type="checkbox"/>	<input type="checkbox"/>
16. Pull the wire through the plate	<input type="checkbox"/>	<input type="checkbox"/>
17. Maintain the constant speed to ensure the uniformity	<input type="checkbox"/>	<input type="checkbox"/>
18. Repeat the process with successively smaller holes until the desired diameter is achieved	<input type="checkbox"/>	<input type="checkbox"/>
19. Prepare the metal blanks as per requirement	<input type="checkbox"/>	<input type="checkbox"/>
20. Check the property of Blank as per standards	<input type="checkbox"/>	<input type="checkbox"/>
21. Set number of Dies according to requirement.	<input type="checkbox"/>	<input type="checkbox"/>
22. Set the drawing load as per requirement	<input type="checkbox"/>	<input type="checkbox"/>
23. Pull the wire through the metal blank	<input type="checkbox"/>	<input type="checkbox"/>
24. Carry out wire drawing as per standard	<input type="checkbox"/>	<input type="checkbox"/>
25. Measure the diameter of wire and confirm it with requirements.	<input type="checkbox"/>	<input type="checkbox"/>

Candidate's Signature\_\_\_\_\_ Assessor's Signature\_\_\_\_\_

Date: \_\_\_\_\_

## Assessors Judgment Guide

<b>Qualification</b>	<b>National Vocational Certificate in Metal Forming &amp; Processing Level 4</b>
<b>Competency Standard</b>	Perform Wire Drawing Process
<b>Purpose of Assessment</b>	Formative Assessment

<b>Candidate Details</b>	Name: _____ Registration/Roll Number: _____ Signature: _____
<b>Assessment Outcome</b>	COMPETENT <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/> Name of the Assessor _____ Assessor's code: _____ Signature: _____

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							

## Observation Checklist

<b>Assessment Task</b>		<ul style="list-style-type: none"><li>• Arrange tools and equipment for wire drawing through draw plate</li><li>• Perform Annealing of the given wire to be drawn</li><li>• Carryout pulling of wire through drawplate</li><li>• Perform wire drawing operation on metal blank</li></ul>		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Arrange the required tools and equipment required for the process			
2.	Arrange raw material wire for wire drawing process as per requirement			
3.	Select the required tools and equipment for wire drawing process			
4.	Inspect the working condition of tools and equipment			
5.	Heat the wire in the heating furnace up to required temperature			
6.	Set standard soaking time of the heat treatment furnace as per requirements			
7.	Stop the heating once the required temperature and soaking time is achieved.			
8.	Perform the cooling of raw material wire in furnace			
9.	Install the draw plate as per standard			
10.	Fix the draw plate in the vise			
11.	Taper the proper length of the wire to be drawn			
12.	Lubricate the wire to be drawn			
13.	Select a hole in the draw plate slightly smaller than the diameter of raw material wire			
14.	Insert the taper end of wire in the back side of draw plate			
15.	Grasp the wire from the front of the plate with a draw tong or heavy duty pliers			
16.	Pull the wire through the plate			
17.	Maintain the constant speed to ensure the uniformity			
18.	Repeat the process with successively smaller holes until the desired diameter is achieved			

19.	Prepare the metal blanks as per requirement			
20.	Check the property of Blank as per standards			
21.	Set number of Dies according to requirement.			
22.	Set the drawing load as per requirement			
23.	Pull the wire through the metal blank			
24.	Carry out wire drawing as per standard			
25.	Measure the diameter of wire and confirm it with requirements.			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

## Knowledge Assessment

<b>Qualification</b>	<b>National Vocational Certificate in Metal Forming &amp; Processing Level 4</b>
<b>Competency Standard</b>	Perform Wire Drawing Process
<b>Purpose of Assessment</b>	<b>Formative Assessment</b>
<b>Candidate Details</b>	Name: _____ Registration/Roll Number: _____ Candidate Signature: _____
<b>Assessment Outcome</b>	<div style="display: flex; justify-content: space-around; align-items: center;"> <span><b>COMPETENT</b> <input type="checkbox"/></span> <span><b>NOT YET COMPETENT</b> <input type="checkbox"/></span> </div> Name of the Assessor: _____ Assessor's code: _____ Signature of the Assessor: _____

Candidate's response is not required to be identical, but similar concepts and/or keywords must be used. Oral questioning may be used to clarify candidate understanding of topic and its application.

Questions (Candidate confidently answered questions correctly and demonstrated understanding of the topics and their application)		Satisfactory	Not Satisfactory
1.	Describe the raw material used for wire drawing.		
2.	Define wire drawing		
3.	Describe the purpose of annealing of wire to be drawn		



4.	Describe the purpose of lubrication of wire to be drawn		
5.	Describe the difference between wire drawing and extrusion.		

Feedback to the Candidate	
Candidate's Signature_____	Assessor's Signature _____