

# **Assessment Evidence Guide**

**For**

## **“Assistant Steel Fixer/ Erector”**

**Level-2**

**Perform Basic Technical Drawings  
(Formative Assessment)**



**National Vocational & Technical  
Training Commission**

## Instruction Sheet for the Candidate

<b>Title of Qualification:</b> National Vocational Certificate Level 2 in Steel Fixer & Erector (Assistant Steel Fixer/Erector)	<b>CS Code:</b>	<b>Level:2</b>	<b>Version:01</b>
<b>Competency Standard Title:</b> Perform Basic Technical Drawings Perform Basic Communication Skills	<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 draw, label and dimension the pattern with simple geometrical shapes given by assessor.</p> <p><b>Assessment Task 2:</b> Candidate is required to draw, label and dimension the following orthographic projection of simple objects given by assessor.</p> <ul style="list-style-type: none"> <li>First angle projection</li> <li>Third angle projection</li> <li>Missing view</li> <li>Sectional view</li> </ul> <p><b>And complete:</b></p> <ol style="list-style-type: none"> <li>1. Knowledge assessment test (Written or Oral)</li> <li>2. Portfolios at the time of assessment (if any)</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>Performance Criteria 1:</b> Draw different types of lettering</p> <p><b>Performance Criteria 2:</b> Draw different types of lines</p> <p><b>Performance Criteria 3:</b> Draw different geometrical figures</p> <p><b>Performance Criteria 4:</b> Draw simple curve</p> <p><b>Performance Criteria 5:</b> Create a pattern with simple shapes</p>

	<p><b>Performance Criteria 6:</b> Draw geometrical tolerance</p> <p><b>Performance Criteria 7:</b> Treat team members with respect</p> <p><b>Performance Criteria 8:</b> Maintain positive relationships to achieve common organizational goals</p> <p><b>Performance Criteria 9:</b> Identify problems in communication with a team</p>
	<p><b>Assessment Task 2</b></p> <p><b>Performance Criteria 1:</b> Draw first angle projection</p> <p><b>Performance Criteria 2:</b> Draw third angle projection</p> <p><b>Performance Criteria 3:</b> Draw missing views</p> <p><b>Performance Criteria 4:</b> Draw different section views</p> <p><b>Performance Criteria 5:</b> Draw different types of dimensions.</p> <p><b>Performance Criteria 6:</b> Draw geometrical tolerance</p> <p><b>Performance Criteria 7:</b> Draw different drawing symbols</p> <p><b>Performance Criteria 8:</b> Receive the instructions from Supervisor</p> <p><b>Performance Criteria 9:</b> Carry out the instructions of the supervisor</p>
	<p><b>Portfolios required at the time of assessment (if any) for</b></p>



## Observation Checklist

<b>Assessment Task 1</b>	<b>Description of Assessment Task 1</b>			
	Candidate is required to draw, label and dimension the pattern with simple geometrical shapes given by assessor.			
<b>During the practical assessment, candidate demonstrated the following:</b>		<b>Yes</b>	<b>No</b>	<b>Remarks</b>
1.	Draw different types of lettering			
2.	Draw different types of lines			
3.	Draw different geometrical figures			
4.	Draw simple curve			
5.	Create a pattern with simple shapes			
6.	Draw geometrical tolerance			
7.	Treat team members with respect and maintain positive relationships to achieve common organizational goals			
8.	Maintain positive relationships to achieve common organizational goals			
9.	Identify problems in communication with a team			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		
Each Assessment Task (with performance criteria)				

Assessment Task 2		Description of Assessment Task2		
		Candidate is required to draw, label and dimension the following orthographic projection of simple objects given by assessor. <ul style="list-style-type: none"> <li>• First angle projection</li> <li>• Third angle projection</li> <li>• Missing view</li> <li>• Sectional view</li> </ul>		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Draw first angle projection			
2.	Draw third angle projection			
3.	Draw missing views			
4.	Draw different sectional views			
5.	Draw different types of dimensions.			
6.	Draw geometrical tolerance			
7.	Draw different drawing symbols			
8.	Receive the instructions from Supervisor			
9.	Carry out the instructions of the supervisor			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

## Knowledge Assessment

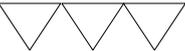
<b>Title of Qualification:</b> National Vocational Certificate Level 2 in Steel Fixer & Erector (Assistant Steel Fixer/Erector)	<b>CS Code:</b>	<b>Level:</b> 2	<b>Version:</b> 01
<b>Competency Standard Title:</b> Perform Basic Technical Drawings Basic Communication Skills	<b>Assessment Date (DD/MM/YY):</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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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>Questions</b> (Candidate confidently answered questions correctly and demonstrated understanding of the topics and their application)	
1. Enlist any three types of dimensions?	
2. Enlist the types of scales?	

**Questions** (Candidate confidently answered questions correctly and demonstrated understanding of the topics and their application)

3. Write the types of development drawings?	
4. Enlist the types of linear dimensions?	
5. Enlist the types of sectional views?	
6. Find the name of below mention abbreviations: a. ASSY b. CM c. CL d. CHAM e. CSK	
7. Find the name of below mention abbreviations: a. CSK HD b. C'BORE or CBORE c. DIA d. DIM	
8. 	
9. Write the any three application of ethic?	
10. Enlist any five Verbal communication techniques?	
11. Model of Communication SM CR is stands for?	

## ANSWER KEY

Sr.	Answers
1.	Linear Dimensions. Radial Dimensions. Angular Dimensions. Ordinate Dimensions. Arc Length Dimensions .Baseline and Continued Dimensions.
2.	<ul style="list-style-type: none"><li>• Nominal Scale.</li><li>• Ordinal Scale.</li><li>• Interval Scale.</li><li>• Ratio Scale.</li></ul>
3.	<ul style="list-style-type: none"><li>• Parallel</li><li>• Radial</li><li>• Triangulation.</li></ul>
4.	<ul style="list-style-type: none"><li>• Horizontal</li><li>• Vertical,</li><li>• Aligned</li></ul>
5.	<ul style="list-style-type: none"><li>• Full sections. ...</li><li>• Half sections or views. ...</li><li>• Offset sections or views. ...</li><li>• Broken out sections or broken views. ...</li><li>• Revolving sections or view. ...</li><li>• Removed sections.</li></ul>
6.	<ul style="list-style-type: none"><li>• Assembly</li><li>• Centimeters</li><li>• Center line</li><li>• Chamfered</li><li>• Countersink</li></ul>
7.	Countersink Head ,Counter bore, Diameter, Dimension, Drawing, Hexagon
8.	Grinding
9.	<ul style="list-style-type: none"><li>• Reliability</li><li>• Dedication</li><li>• Discipline</li><li>• Productivity</li><li>• Cooperation</li><li>• Responsibility</li><li>• Professionalism</li></ul>
10.	Active listening ,Clarity and conciseness ,Confidence, Empathy, Friendliness, Open-mindedness, Giving and soliciting feedback, Confidence, Respectfulness
11.	Sender-Message-Channel-Receiver (SMCR)

# **Assessment Evidence Guide**

**For**

## **“Assistant Steel Fixer/Erector”**

**Level-2**

**Demonstrate Basic Numeracy Skill**

**(Formative Assessment)**



**National Vocational & Technical  
Training Commission**

## Instruction Sheet for the Candidate

<b>Title of Qualification:</b> National Vocational Certificate Level 2 in Steel Fixer & Erector (Assistant Steel Fixer/Erector)	<b>CS Code:</b>	<b>Level:</b> 2	<b>Version:</b> 01
<b>Competency Standard Title:</b> Demonstrate Basic Numeracy Skill Perform Basic Communication Skills	<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 style="margin-left: 40px;"><b>Assessment Task 1:</b> Candidate is required to convert the SI system quantities into FPS given by assessor.</p> <p style="margin-left: 40px;"><b>Assessment Task 2:</b> Candidate is required to calculate volume of two different types of rebars and calculate percentage with respect of the total volume of rebars given by assessor.</p> <p><b>And complete:</b></p> <ol style="list-style-type: none"> <li>1. Knowledge assessment test (Written or Oral)</li> <li>2. Portfolios at the time of assessment (if any)</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>Performance Criteria 1:</b> Perform addition</p> <p><b>Performance Criteria 2:</b> Perform subtraction</p> <p><b>Performance Criteria 3:</b> Perform multiplication</p> <p><b>Performance Criteria 4:</b> Perform division</p> <p><b>Performance Criteria 5:</b> Calculate percentage</p> <p><b>Performance Criteria 6:</b> Select measuring tools as per requirement</p> <p><b>Performance Criteria 7:</b> Identify imperial and metric system</p> <p><b>Performance Criteria 8:</b> Perform inter conversion of Measuring units</p> <p><b>Performance Criteria 9:</b> Receive the instructions from supervisor</p>
	<p><b>Assessment Task 2</b></p> <p><b>Performance Criteria 1:</b> Calculate area of geometrical figures</p> <p><b>Performance Criteria 2:</b> Calculate volume of solid figures</p> <p><b>Performance Criteria 3:</b> Calculate quantities of materials in the stack/pile of stone aggregate by incorporating time saving practices</p> <p><b>Performance Criteria 4:</b> Carry out the instructions of the supervisor</p>



## Observation Checklist

<b>Assessment Task 1</b>	<b>Description of Assessment Task 1</b>			
	Candidate is required to convert the SI system quantities into FPS given by assessor.			
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Perform addition			
2.	Perform subtraction			
3.	Perform multiplication			
4.	Perform division			
5.	Calculate percentage			
6.	Select measuring tools as per requirement			
7.	Identify imperial and metric system			
8.	Perform inter conversion of Measuring units			
9.	Perform inter conversion of Measuring units			
10.	Receive the instructions from supervisor			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

<b>Assessment Task 2</b>	<b>Description of Assessment Task 2</b>			
	Candidate is required to calculate volume of two different types of rebars and calculate percentage with respect of the total volume of rebars given by assessor.			
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Calculate area of geometrical figures			
2.	Calculate volume of solid figures			
3.	Calculate quantities of materials in the stack/pile of stone aggregate by incorporating time saving practices			
4.	Carry out the instructions of the supervisor			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

## Knowledge Assessment

<b>Title of Qualification:</b> National Vocational Certificate Level 2 in Steel Fixer& Erector(Assistant Steel Fixer)	<b>CS Code:</b>	<b>Level:</b> 2	<b>Version:</b> 01
<b>Competency Standard Title:</b> Demonstrate Basic Numeracy Skill Perform Basic Communication Skills	<b>Assessment Date (DD/MM/YY):</b>  <b>Assessment Time:</b> 30 min		

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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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>Questions</b> (Candidate confidently answered questions correctly and demonstrated understanding of the topics and their application)	
1. How many inches in 4'-6"?	
2. Calculate the volume of Cube, having 6 cm length?	
3. How many feet is a meter?	

**Questions** (Candidate confidently answered questions correctly and demonstrated understanding of the topics and their application)

4. Convert 20 meters in centimeters.	
5. Explain basic measuring units?	
6. Define inter conversion of linear dimensions?	
7. Define inter conversion of weights?	
8. What are types of linear measuring tools?	
9. Enlist any five Verbal communication techniques?	
10. Enlist non-verbal communication techniques?	



**Assessment Evidence  
Guide**

**For**

**“Assistant Steel Fixer/  
Erector”**

**Level-2**

**Perform Cutting and Bending Re-Bars**  
**(Formative Assessment)**



**National Vocational & Technical  
Training Commission**

## Instruction Sheet for the Candidate

<b>Title of Qualification:</b> National Vocational Certificate Level 2 in Steel Fixer & Erector (Assistant Steel Fixer/Erector)	<b>CS Code:</b>	<b>Level:</b> 2	<b>Version:</b> 01
<b>Competency Standard Title:</b> Perform Cutting and Bending Re-Bars Maintain Steel Fixing Tools, Equipment and Materials  Perform Basic Communication Skills  Follow Safety Rules at Site	<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 style="margin-left: 40px;"><b>Assessment Task 1:</b> Candidate is required to perform cutting of rebar as per bar bending schedule given by assessor.</p> <p style="margin-left: 40px;"><b>Assessment Task 2:</b> Candidate is required to perform bending of rebar as per bar bending schedule given by assessor.</p> <p style="margin-left: 40px;"><b>Assessment Task 3:</b> Candidate is required to perform shaping of rebar as per bar bending schedule given by assessor.</p> <p><b>And complete:</b></p> <ol style="list-style-type: none"> <li>1. Knowledge assessment test (Written or Oral)</li> <li>2. Portfolios at the time of assessment (if any)</li> </ol>

<p>Minimum Evidence Required</p>	<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>Performance Criteria 1:</b> Select the tools as per job requirement.</p> <p><b>Performance Criteria 2:</b> Identify risk associated with job to be done</p> <p><b>Performance Criteria 3:</b> Select and wear the PPEs relevant to Job.</p> <p><b>Performance Criteria 4:</b> Interpret the hand sketch of bend up bars, stirrups &amp; chair bars etc.</p> <p><b>Performance Criteria 5:</b> Select the types of rebar as per job</p> <p><b>Performance Criteria 6:</b> Mark the cutting length of stirrups &amp; ties bar on rebars</p> <p><b>Performance Criteria 7:</b> Mark the cutting length of chair bar on rebars</p> <p><b>Performance Criteria 8:</b> Check the dia of rebars</p> <p><b>Performance Criteria 9:</b> Check the gauge of binding wire</p> <p><b>Performance Criteria 10:</b> Mark the spacing of rebars with chalk on plate form as per sketch</p> <p><b>Performance Criteria 11:</b> Place the steel base on firm and level surface.</p> <p><b>Performance Criteria 12:</b> Perform straightening of rebar using hammer and bending lever.</p> <p><b>Performance Criteria 13:</b> Place the cutting base with chool/wedge on firm and level surface.</p> <p><b>Performance Criteria 14:</b> Cut the binding wire using chisel &amp; hammer</p> <p><b>Performance Criteria 15:</b> Cut the rebar using power cutting tools.</p> <p><b>Performance Criteria 16:</b> Maintain positive relationships to achieve common organizational goals.</p> <p><b>Performance Criteria 17:</b> Identify risk associated with job to be done</p> <p><b>Performance Criteria 18:</b> Report unsafe condition to immediate supervisor (shift position)</p>
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	<p><b>Assessment Task 2</b></p> <p><b>Performance Criteria 1:</b> Select the tools as per job requirement.</p> <p><b>Performance Criteria 2:</b> Place the bending table on firm &amp; level ground.</p> <p><b>Performance Criteria 3:</b> Mark on rebar as per sketch.</p> <p><b>Performance Criteria 4:</b> Select appropriate lever according to dia of rebar.</p> <p>Bend the rebar according to required angle</p> <p><b>Performance Criteria 5:</b> Check the bent rebar for its shape, angle &amp; length</p> <p><b>Performance Criteria 6:</b> Carry out the instructions of the supervisor</p> <p><b>Performance Criteria 7:</b> Clean and check the working condition of Tools components and accessories.</p>
	<p><b>Assessment Task 3</b></p> <p><b>Performance Criteria 1:</b> Collect and check the bending tools &amp; accessories required for bending of stirrups, ties, rings and chairs</p> <p><b>Performance Criteria 2:</b> Mark and pin on bending bench for making of stirrups, ties, rings and chairs.</p> <p><b>Performance Criteria 3:</b> Place rebar between the pins and bend at required angle.</p> <p><b>Performance Criteria 4:</b> Check the bent rebar for its shape, angle &amp; length.</p> <p><b>Performance Criteria 5:</b> Check and clean all tools &amp; accessories for any discrepancy tag and report.</p> <p><b>Performance Criteria 6:</b> Clear work area and dispose off rebar wastage as per standard.</p> <p><b>Performance Criteria 7:</b> Treat team members with respect</p> <p><b>Performance Criteria 8:</b> Maintain positive relationships to achieve common organizational goals</p>



## Observation Checklist

Each Assessment Task (with performance criteria)				
<b>Assessment Task 1</b>		<b>Description of Assessment Task 1</b>		
		Perform cutting of rebars as per bar bending schedule given by assessor.		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Select the tools as per job requirement.			
2.	Identify risk associated with job to be done			
3.	Select and wear the PPEs relevant to Job.			
4.	Interpret the hand sketch of bend up bars, stirrups & chair bars etc.			
5.	Select the types of rebar as per job			
6.	Mark the cutting length of stirrups & ties bar on rebars			
7.	Mark the cutting length of chair bar on rebars			
8.	Check the dia of rebars			
9.	Check the gauge of binding wire			
10.	Mark the spacing of rebars with chalk on plate- form as per sketch			
11.	Place the steel base on firm and level surface.			
12.	Perform straightening of rebar using hammer and bending lever.			
13.	Place the cutting base with chool/wedge on firm and level surface.			
14.	Cut the binding wire using chisel & hammer			
15.	Cut the rebar using power cutting tools.			
16.	Maintain positive relationships to achieve common organizational goals.			
17.	Identify risk associated with job to be done			
18.	Report unsafe condition to immediate supervisor (shift position)			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

<b>Assessment Task 2</b>		<b>Description of Assessment Task 2</b>		
		Perform bending of rebars as per bar bending schedule given by assessor.		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Select the tools as per job requirement.			
2.	Place the bending table on firm & level ground.			
3.	Mark on rebar as per sketch.			
4.	Select appropriate lever according to dia of rebar.			
5.	Check the bent rebar for its shape, angle & length			
6.	Carry out the instructions of the supervisor			
7.	Clean and check the working condition of Tools components and accessories.			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

<b>Assessment Task 3</b>		<b>Description of Assessment Task 3</b>		
		Perform shaping of rebars as per bar bending schedule given by assessor.		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Collect and check the bending tools & accessories required for bending of stirrups, ties, rings and chairs			
2.	Mark and pin on bending bench for making of stirrups, ties, rings and chairs.			
3.	Place rebar between the pins and bend at required angle.			
4.	Check the bent rebar for its shape, angle & length.			
5.	Check and clean all tools & accessories for any discrepancy tag and report.			
6.	Clear work area and dispose off rebar wastage as per requirement			
7.	Treat team members with respect and			
8.	Maintain positive relationships to achieve common organizational goals			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		



**Questions** (Candidate confidently answered questions correctly and demonstrated understanding of the topics and their application)

3. Enlist the bending tools	
4. What are the methods of protecting steel from rusting?	
5. State importance of cleaning tools and equipment?	
6. What is simple arithmetic?	
7. What is a bar bending schedule?	
8. What is effective communication?	
9. Enlist any five verbal communication techniques	
10. Enlist non-verbal communication techniques	
11. State importance of cleaning tools and equipment's?	

## ANSWER KEY

Sr.	Answers
1.	Steel is one of the basic materials used in today's civil engineering industry due to its proven high strength and durability
2.	<ul style="list-style-type: none"> <li>• Drill.</li> <li>• Milling tools.</li> <li>• Broach.</li> <li>• Tap/thread cutting die.</li> <li>• Reamer</li> <li>• Blade</li> </ul>
3.	<ul style="list-style-type: none"> <li>• Electric Rebar Cutters.</li> <li>• Heavy Duty Rebar Cutter.</li> <li>• Wire Rope Cutters.</li> <li>• Rebar Cutting Shear.</li> </ul>
4.	<ul style="list-style-type: none"> <li>• Apply Oil. ...</li> <li>• Apply a Dry Coating. ...</li> <li>• Paint the Metal. ...</li> <li>• Store Properly. ...</li> <li>• Galvanize.</li> </ul>
5.	The tools you use will dictate how well an area will be free from germs, contaminants, and viruses which are hazardous to health.
6.	Arithmetic is the basic study of numbers. The four basic arithmetic operations are addition, subtraction, multiplication, and division.
7.	Bar Bending Schedule is a detailed list of bent reinforcement bars given in any structural concrete element
8.	Effective Communication is defined as the ability to convey information to another effectively and efficiently.
9.	<ul style="list-style-type: none"> <li>• Active listening</li> <li>• Clarity and conciseness</li> <li>• Confidence</li> <li>• Empathy</li> <li>• Friendliness</li> <li>• Open-mindedness</li> <li>• Giving and soliciting feedback</li> <li>• Confidence</li> <li>• Respectfulness</li> </ul>
10.	<ul style="list-style-type: none"> <li>• Body movement and posture</li> <li>• Gestures</li> <li>• Eye contact</li> <li>• Touch</li> <li>• Space</li> <li>• Voice</li> </ul>
11.	The tools you use will dictate how well an area will be free from germs, contaminants, and viruses which are hazardous to health.

**Assessment Evidence  
Guide**

**For**

**“Assistant Steel Fixer/  
Erector”**

**Level-2**

**Execute the Steel Work of Foundations**  
**(Formative Assessment)**



**National Vocational & Technical  
Training Commission**

## Instruction Sheet for the Candidate

<b>Title of Qualification:</b> National Vocational Certificate Level 2 in Steel Fixer & Erector (Assistant Steel Fixer/Erector)	<b>CS Code:</b>	<b>Level:</b> 2	<b>Version:</b> 01
<b>Competency Standard Title:</b> Execute the Steel Work of Foundations Maintain Steel Fixing Tools, Equipment and Materials Perform Basic Communication Skills Follow Safety Rules at Site	<b>Assessment Date (DD/MM/YY):</b>  <b>Assessment Time :</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 the given time frame (for practical demonstration &amp; assessment):</b></p> <p><b>Assessment Task 1:</b> Candidate is required to perform erection of foundation reinforcement as per instruction given by assessor.</p> <p><b>And complete:</b></p> <ol style="list-style-type: none"> <li>3. Knowledge assessment test (Written or Oral)</li> <li>4. Portfolios at the time of assessment (if any)</li> </ol>

<p>Minimum Evidence Required</p>	<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>Performance Criteria 1:</b> Interpret the drawing</p> <p><b>Performance Criteria 2:</b> Select the tools as per job requirement.</p> <p><b>Performance Criteria 3:</b> Place the steel base on firm and level surface.</p> <p><b>Performance Criteria 4:</b> Categorize the types of rebars according to bar bending schedule</p> <p><b>Performance Criteria 5:</b> Select and wear the PPEs relevant to Job.</p> <p><b>Performance Criteria 6:</b> Straighten up the rebars</p> <p><b>Performance Criteria 7:</b> Measure and mark the required cut length on rebars</p> <p><b>Performance Criteria 8:</b> Cut the rebars with relevant cutting tool</p> <p><b>Performance Criteria 9:</b> Make the bundle of cutting rebars and mark the bar code using tag for foundation.</p> <p><b>Performance Criteria 10:</b> Place rebars as per drawing</p> <p><b>Performance Criteria 11:</b> Place dowel rebars for neck column</p> <p><b>Performance Criteria 12:</b> Bind rebars with binding wire according to the drawing</p> <p><b>Performance Criteria 13:</b> Provide steel chairs and spacers for the erected frame work of steel</p> <p><b>Performance Criteria 14:</b> Carry out the instructions of the supervisor</p> <p><b>Performance Criteria 15:</b> Report unsafe condition to immediate supervisor (shift position)</p> <p><b>Performance Criteria 16:</b> Clean and check the working condition of Tools components and accessories.</p>
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## Observation Checklist

<b>Assessment Task 1</b>	<b>Description of Assessment Task 1</b>			
	Candidate is required to perform erection of foundation reinforcement as per instruction given by assessor.			
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Interpret the drawing			
2.	Select the tools as per job requirement.			
3.	Place the steel base on firm and level surface.			
4.	Categorize the types of rebars according to bar bending schedule			
5.	Select and wear the PPEs relevant to Job.			
6.	Straighten the rebars			
7.	Measure and mark the required cut length on rebars			
8.	Cut the rebars with relevant cutting tool			
9.	Make the bundle of cutting rebars and mark the bar code using tag for foundation			
10.	Place rebars as per drawing			
11.	Place dowel rebars for neck column			
12.	Bind rebars with binding wire according to the drawing			
13.	Provide steel chairs and spacers for the erected frame work of steel			
14.	Carry out the instructions of the supervisor			
15.	Report unsafe condition to immediate supervisor (shift position)			
16.	Clean and check the working condition of Tools components and accessories.			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		



**Questions** (Candidate confidently answered questions correctly and demonstrated understanding of the topics and their application)

3. Define RCC footing	
4. What is the steel grade used in construction?	
5. What are the 4 classifications of steel?	
6. What is the use of chair reinforcement?	
7. What are the hazards at construction site?	
8. What is 5C's of effective communication?	
9. Enlist any five Verbal communication techniques	
10. Enlist non-verbal communication techniques	
11. What is the basic safe handling method for measuring instruments?	

## ANSWER KEY

Sr.	Answers
1.	<ul style="list-style-type: none"> <li>• Shallow foundation</li> <li>• Deep Foundation</li> </ul>
2.	<ul style="list-style-type: none"> <li>• Individual footing or isolated footing</li> <li>• Combined footing</li> <li>• Strip foundation</li> <li>• Raft or mat foundation</li> </ul>
3.	They are Reinforced Cement Concrete (RCC) footings, and are made up of steel bars that act as a reinforcement to the concrete foundation, which bears the entire weight of the home
4.	<ul style="list-style-type: none"> <li>• Grade 40 and Grade 60</li> </ul>
5.	<ul style="list-style-type: none"> <li>• Carbon steel</li> <li>• Stainless steel</li> <li>• Alloy steel</li> <li>• Tool steel</li> </ul>
6.	Chair reinforcement or simply chair bars are small structural elements used to properly place reinforcement bars in position and maintain the proper space between the top and bottom reinforcements..
7.	<ul style="list-style-type: none"> <li>• Wear your PPE at all times</li> <li>• Do not start work without an induction</li> <li>• Keep a tidy site</li> <li>• Do not put yourself or others at risk</li> <li>• Follow safety signs and procedures</li> <li>• Never work in unsafe areas</li> </ul>
8.	clear, cohesive, complete, concise, and concrete
9.	<ul style="list-style-type: none"> <li>• Active listening</li> <li>• Clarity and conciseness</li> <li>• Confidence</li> <li>• Empathy</li> <li>• Friendliness</li> <li>• Open-mindedness</li> <li>• Giving and soliciting feedback</li> <li>• Confidence</li> <li>• Respectfulness</li> </ul>
10.	<ul style="list-style-type: none"> <li>• Body movement and posture</li> <li>• Gestures</li> <li>• Eye contact</li> <li>• Touch</li> <li>• Space</li> <li>• Voice</li> </ul>
11.	To attain an accurate measurement reading, carefully handle and align the device. Take the <b>time to “measure twice – cut once”</b> . Always try to keep your measuring tools clean and protected

# **Assessment Evidence Guide**

**For**

## **“Assistant Steel Fixer/ Erector”**

**Level-2**

**Execute Steel Work in Column for Domestic  
Building**

**(Formative Assessment)**



**National Vocational & Technical  
Training Commission**

## Instruction Sheet for the Candidate

<b>Title of Qualification:</b> National Vocational Certificate Level 2 in Steel Fixer & Erector (Assistant Steel Fixer/Erector)	<b>CS Code:</b>	<b>Level:</b> 2	<b>Version:</b> 01
<b>Competency Standard Title:</b> Execute Steel Work in Column for Domestic Building  Maintain Steel Fixing Tools, Equipment and Materials  Perform Basic Communication Skills  Follow Safety at Site	<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 cutting of vertical bars and lateral ties assigned by assessor.</p> <p><b>Assessment Task 2:</b> Candidate is required to perform bending of bars as per job given by assessor.</p> <p><b>Assessment Task 3:</b> Candidate is required to bind the vertical bars as per drawing given by assessor.</p> <p><b>And complete:</b></p> <ol style="list-style-type: none"> <li>1. Knowledge assessment test (Written or Oral)</li> <li>2. Portfolios at the time of assessment (if any)</li> </ol>

<p>Minimum Evidence Required</p>	<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>Performance Criteria 1:</b> Interpret reinforcement drawing</p> <p><b>Performance Criteria 2:</b> Interpret bar bending schedule</p> <p><b>Performance Criteria 3:</b> Select the tools as per job requirement.</p> <p><b>Performance Criteria 4:</b> Select and wear the PPEs relevant to Job.</p> <p><b>Performance Criteria 5:</b> Measure and mark the required cut length on bars as per bar bending schedule</p> <p><b>Performance Criteria 6:</b> Cut the rebars with appropriate cutting tool</p> <p><b>Performance Criteria 7:</b> Make the bundle of cutting rebars and mark the rebar code using tag.</p> <p><b>Performance Criteria 8:</b> Carry out the instructions of the supervisor</p> <p><b>Performance Criteria 9:</b> Clean and check the working condition of Tools components and accessories.</p>
	<p><b>Assessment Task 2</b></p> <p><b>Performance Criteria 1:</b> Bend the bar to make the lateral ties, as per bar bending schedule.</p> <p><b>Performance Criteria 2:</b> Make the bundle of ties and attach the rebar code tag for reference.</p> <p><b>Performance Criteria 3:</b> Stack all the components &amp; material in proper place to ensure safe work.</p> <p><b>Performance Criteria 4:</b> Clean and check the working condition of Tools components and accessories.</p> <p><b>Performance Criteria 5:</b> Carry out the instructions of the supervisor</p>

**Assessment Task 3**

**Performance Criteria 1:** Place the lateral ties

**Performance Criteria 2:** Erect the main vertical rebars one by one with dowel bar of column within the lateral ties.

**Performance Criteria 3:** Bind the main vertical rebars with ties with the help of binding wire according to drawing/bar bending schedule.

**Performance Criteria 4:** Fix spacer around the column as per drawing

**Performance Criteria 5:** Arrange the Steel Fixer & Erector tools, components and accessories at appropriate positions in store

**Performance Criteria 6:** Get work related information from team



## Observation Checklist

<b>Assessment Task 1</b>	<b>Description of Assessment Task 1</b>			
	Candidate is required to perform Cutting of vertical bars and lateral ties assigned by assessor.			
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Interpret reinforcement drawing			
2.	Interpret bar bending schedule			
3.	Select the tools as per job requirement.			
4.	Select and wear the PPEs relevant to Job.			
5.	Measure and mark the required cut length on bars as per bar bending schedule			
6.	Cut the bars with appropriate cutting tool			
7.	Make the bundle of cutting bars and mark the bar code using tag.			
8.	Carry out the instructions of the supervisor			
9.	Clean and check the working condition of Tools components and accessories.			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

<b>Assessment Task 2</b>		<b>Description of Assessment Task 2</b>		
		Candidate is required to perform bending of bars as per job given by assessor.		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Bend the bar to make the lateral ties, as per bar bending schedule.			
2.	Make the bundle of ties and attach the bar code tag for reference.			
3.	Check physical condition of tools before use.			
4.	Stack all the components & material in proper place to ensure safe work.			
5.	Clean and check the working condition of Tools components and accessories.			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

<b>Assessment Task 3</b>		<b>Description of Assessment Task 3</b>		
		Candidate is required to Bind the vertical bars as per drawing given by assessor.		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Place the lateral ties			
2.	Erect the main vertical bars one by one with dowel bar of column within the lateral ties.			
3.	Bind the main vertical bars with ties with the help of binding wire according to drawing/bar bending schedule.			
4.	Fix spacer around the column as per drawing			
5.	Arrange the Steel Fixer & Erector tools, components and accessories at appropriate positions in store			
6.	Get work related information from team			



**Questions** (Candidate confidently answered questions correctly and demonstrated understanding of the topics and their application)

4. What are the steps to be taken before using a rebar cutting machine?	
5. Define buckling	
6. How do you identify grade of steel bars?	
7. Define short column.	
8. What is lap length in steel?	
9. Lap length formula?	
10. what is effective communication	
11. What are the safety hazards at construction safety?	
12. State importance of cleaning tools and equipment?	

## ANSWER KEY

Sr.	Answers
1.	<ul style="list-style-type: none"> <li>• Read structural drawings easily.</li> <li>• Read detailed drawings of footings, slab, beam, column, staircase, etc.</li> <li>• Plan and execute the construction projects.</li> <li>• Estimate the building projects.</li> </ul>
2.	Bar Bending Schedule helps the quantity surveyor to consolidate the number of bars required of each bar type
3.	Scriber
4.	Always wear eye protection and a face shield whenever using this equipment.
5.	Buckling is the sudden change in shape (deformation) of a structural component under load,
6.	<ul style="list-style-type: none"> <li>• The first letter or symbol identifies the producing mill.</li> <li>• The next marking is the bar size</li> </ul>
7.	The short column is the one whose ratio of effective length to its least lateral dimension is less than or equal to 12.
8.	A lap is when two pieces of reinforcing bar (rebar) are overlapped to create a continuous line of rebar.
9.	$2 L_d$ or $30d$
10.	Effective Communication is defined as the ability to convey information to another effectively and efficiently
11.	<ul style="list-style-type: none"> <li>• Improper Scaffolding Use</li> <li>• Lack of Fall Protection</li> <li>• Inadequate Equipment on Excavation Sites</li> <li>• Faulty Ladders</li> <li>• Lack of Head Protection</li> <li>• Improperly Maintained Stairways</li> <li>• Poorly Constructed Trenches</li> <li>• Improper Crane Us</li> </ul>
12.	The tools you use will dictate how well an area will be free from germs, contaminants, and viruses which are hazardous to health.
Competent <input type="checkbox"/> <span style="margin-left: 200px;">Not Yet Competent <input type="checkbox"/></span>	

# **Assessment Evidence Guide**

**For**

## **“Assistant Steel Fixer/ Erector”**

**Level-2**

**Execute Steel Work in Beams for Domestic  
Building**

**(Formative Assessment)**



**National Vocational & Technical  
Training Commission**

## Instruction Sheet for the Candidate

<b>Title of Qualification:</b> National Vocational Certificate Level 2 in Steel Fixer& Erector(Assistant Steel Fixer/Erector)	<b>CS Code:</b>	<b>Level:</b> 2	<b>Version:</b> 01
<b>Competency Standard Title:</b> Execute Steel Work in Beams for Domestic Building  Maintain Steel Fixing Tools, Equipment and Materials  Perform Basic Communication Skills  Follow Safety Rule at Site	<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 cutting of main rebars assigned by assessor.</p> <p><b>Assessment Task 2:</b> Candidate is required to perform bending for ties and hooks as per job given by assessor.</p> <p><b>Assessment Task 3:</b> Candidate is required to perform placing of rebars assigned by assessor.</p> <p><b>Assessment Task 4:</b> Candidate is required to bind the stirrups with main rebars as per drawing given by assessor.</p> <p><b>And complete:</b></p> <ol style="list-style-type: none"> <li>1. Knowledge assessment test (Written or Oral)</li> <li>2. Portfolios at the time of assessment (if any)</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>Performance Criteria 1:</b> Interpret bar bending schedule</p> <p><b>Performance Criteria 2:</b> Select the tools as per job requirement.</p> <p><b>Performance Criteria 3:</b> Select and wear PPEs relevant to Job.</p> <p><b>Performance Criteria 4:</b> Straighten up the rebars</p> <p><b>Performance Criteria 5:</b> Measure and mark the required cut length on rebars</p> <p><b>Performance Criteria 6:</b> Cut the rebars with relevant cutting tool</p> <p><b>Performance Criteria 7:</b> Make the bundle of cutting rebars and mark the bar code using tag for beam.</p> <p><b>Performance Criteria 8:</b> Treat team members with respect</p> <p><b>Performance Criteria 9:</b> Maintain positive relationships to achieve common organizational goals</p> <p><b>Performance Criteria 10:</b> Get work related information from team</p> <p><b>Performance Criteria 11:</b> Identify basic safety signs and symbols</p> <p><b>Performance Criteria 12:</b> Report unsafe condition to immediate supervisor (shift position)</p>
	<p><b>Assessment Task 2</b></p> <p><b>Performance Criteria 1:</b> Select the tools as per job requirement.</p> <p><b>Performance Criteria 2:</b> Bend the rebars to make the stirrups using bar bending schedule</p> <p><b>Performance Criteria 3:</b> Bend the end hooks for main, and bent up rebars as per bar bending schedule.</p> <p><b>Performance Criteria 4:</b> Make the bundle of stirrups and bent up rebars, attach the bar code tag for reference.</p> <p><b>Performance Criteria 5:</b> Clean and check the working condition of Tools components and accessories.</p> <p><b>Performance Criteria 6:</b> Carry out the instructions of the supervisor</p>

	<p><b>Assessment Task 3</b></p> <p><b>Performance Criteria 1:</b> Select the tools as per job requirement.</p> <p><b>Performance Criteria 2:</b> Transport the bundle of prepared rebars of structural members to the required location</p> <p><b>Performance Criteria 3:</b> Place the bundle of prepared rebars of structural members to the required location</p> <p><b>Performance Criteria 4:</b> Carry out the instructions of the supervisor</p> <p><b>Performance Criteria 5:</b> Check physical condition of tools before use.</p>
	<p><b>Assessment Task 4</b></p> <p><b>Performance Criteria 1:</b> Select the tools as per job requirement.</p> <p><b>Performance Criteria 2:</b> Place main rebars as per drawing</p> <p><b>Performance Criteria 3:</b> Fix the strip along with the main rebars as per drawing</p> <p><b>Performance Criteria 4:</b> Bind the main rebars with stirrups by binding wire</p> <p><b>Performance Criteria 5:</b> Fix spacer around the beam as per drawing</p> <p><b>Performance Criteria 6:</b> Fix spacer bars between rows of main rebars</p> <p><b>Performance Criteria 7:</b> Clean and place tools after use.</p> <p><b>Performance Criteria 8:</b> Get work related information from team</p> <p><b>Performance Criteria 10:</b> Identify interrelated work activities to avoid confusion</p>



## Observation Checklist

Assessment Task 1	Description of Assessment Task 1		
	Candidate is required to perform cutting of main rebars assigned by assessor.		
During the practical assessment, candidate demonstrated the following:	Yes	No	Remarks
1. Interpret bar bending schedule			
2. Select the tools as per job requirement.			
3. Select and wear the PPEs relevant to Job.			
4. Straighten up the rebars			
5. Measure and mark the required cut length on rebars			
6. Cut the rebars with relevant cutting tool			
7. Make the bundle of cutting rebars and mark the bar code using tag for beam.			
8. Treat team members with respect			
9. Maintain positive relationships to achieve common organizational goals			
10. Get work related information from team			
11. Identify basic safety signs and symbols			
12. Report unsafe condition to immediate supervisor (shift position)			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>	

<b>Assessment Task 2</b>		<b>Description of Assessment Task 2</b>		
		Candidate is required to perform bending for ties and hooks as per job given by assessor.		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Select the tools as per job requirement.			
2.	Bend the rebars to make the stirrups using bar bending schedule			
3.	Bend the end hooks for main, and bent up rebars as per bar bending schedule.			
4.	Make the bundle of stirrups and bent up rebars, attach the bar code tag for reference.			
5.	Clean and check the working condition of Tools components and accessories.			
6.	Carry out the instructions of the supervisor			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

<b>Assessment Task 3</b>		<b>Description of Assessment Task 3</b>		
		Candidate is required to perform placing of rebars assigned by assessor.		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Select the tools as per job requirement.			
2.	Transport the bundle of prepared rebars of structural members to the required location			
3.	Place the bundle of prepared rebars of structural members to the required location			
4.	Carry out the instructions of the supervisor			
5.	Check physical condition of tools before use.			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 4		Description of Assessment Task 4		
		Candidate is required to bind the stirrups with main rebars as per drawing given by assessor.		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Select the tools as per job requirement.			
2.	Place main rebars as per drawing			
3.	Fix the strip along with the main rebars as per drawing			
4.	Bind the main rebars with stirrups by binding wire			
5.	Fix spacer around the beam as per drawing			
6.	Fix spacer bars between rows of main rebars			
7.	Clean and place tools after use.			
8.	Get work related information from team			
9.	Identify interrelated work activities to avoid confusion			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		



**Questions** (Candidate confidently answered questions correctly and demonstrated understanding of the topics and their application)

<b>3.</b> Why do we use stirrups in beams?	
<b>4.</b> What is crank bar in beam?	
<b>5.</b> What is the formula for hook length in double bent up bar?	
<b>6.</b> What is the formula for hook length in overlap bar?	
<b>7.</b> Enlist steps involved in finding the cut length of stirrups	
<b>8.</b> Define conciseness in communication	
<b>9.</b> Enlist any three Verbal communication techniques?	
<b>10.</b> Enlist non-verbal communication techniques?	
<b>11.</b> List of Health and safety measures for steel fixer?	
<b>12.</b> What are the 7 basic units of measurement?	

## ANSWER KEY

Sr.	Answers
1.	<i>Main bars</i> are placed at the shorter span direction to transfer the bending moment (B.M) developed at the bottom of the slab to the <i>beam</i> .
2.	A steel bar placed in between the two layers of the main reinforcement in the beam is called a spacer.
3.	Stirrups are placed at proper intervals to beams to resist shear forces.
4.	Bent-up bars or known as Crank bars.
5.	Double Bent up Bar <span style="float: right;">Two Hooks = <math>9d + 9d = 18d</math></span>
6.	Overlap of bars <span style="float: right;">Two Hooks = <math>9d + 9d = 18d</math></span>
7.	<ul style="list-style-type: none"> <li>• Look at the size of column or beam from drawings</li> <li>• Adopt Dia of the bar (generally 8mm Dia is used for stirrups)</li> <li>• Deduct the concrete cover or clear cover</li> </ul>
8.	Conciseness is the extent to which a piece of writing communicates clear information in as few words as possible.
9.	<ul style="list-style-type: none"> <li>• Active listening</li> <li>• Clarity and conciseness</li> <li>• Confidence</li> <li>• Empathy</li> </ul>
10.	<ul style="list-style-type: none"> <li>• Body movement and posture. ...</li> <li>• Gestures.</li> <li>• Eye contact.</li> <li>• Touch.</li> <li>• Space.</li> <li>• Voice.</li> </ul>
11.	<ul style="list-style-type: none"> <li>• Exposure to electricity</li> <li>• Overhead cables,</li> <li>• Falls from height,</li> <li>• Risk of eye injury from flying particles and dust</li> <li>• Manual handling activities</li> </ul>
12.	There are seven basic units in the SI system: the meter (m), the kilogram (kg), the second (s), the kelvin (K), the ampere (A), the mole (mol), and the candela (cd).

**Assessment Evidence  
Guide**

**For**

**“Assistant Steel Fixer/  
Erector”**

**Level-2**

**Execute Steel Work in Roof Slabs for  
Domestic Building**

**(Formative Assessment)**



**National Vocational & Technical  
Training Commission**

## Instruction Sheet for the Candidate

<b>Title of Qualification:</b> National Vocational Certificate Level 2 in Steel Fixer & Erector (Assistant Steel Fixer/Erector)	<b>CS Code:</b>	<b>Level:</b> 2	<b>Version:</b> 01
<b>Competency Standard Title:</b> Execute Steel Work in Roof Slabs for Domestic Building  Maintain Steel Fixing Tools, Equipment and Materials  Perform Basic Communication Skills  Follow Safety Rules at Site	<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 cutting of rebars assigned by assessor.</p> <p><b>Assessment Task 2:</b> Candidate is required to perform bending of rebars as per job given by assessor.</p> <p><b>Assessment Task 3:</b> Candidate is required to perform placing and binding of rebars assigned by assessor.</p> <p><b>Assessment Task 4:</b> Candidate is required to perform placing of spacers as per instruction given by assessor.</p> <p><b>And complete:</b></p> <ol style="list-style-type: none"> <li>1. Knowledge assessment test (Written or Oral)</li> <li>2. Portfolios at the time of assessment (if any)</li> </ol>

<p>Minimum Evidence Required</p>	<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>Performance Criteria 1:</b> Interpret bar bending schedule</p> <p><b>Performance Criteria 2:</b> Interpret structural drawing</p> <p><b>Performance Criteria 3:</b> Select the tools as per job requirement.</p> <p><b>Performance Criteria 4:</b> Identify risk associated with job to be done</p> <p><b>Performance Criteria 5:</b> Select and wear the PPEs relevant to Job.</p> <p><b>Performance Criteria 6:</b> Straighten the rebars</p> <p><b>Performance Criteria 7:</b> Separate the rebars as per bar bending schedule of roof</p> <p><b>Performance Criteria 8:</b> Measure and mark the rebars as per requirements</p> <p><b>Performance Criteria 9:</b> Cut the rebars as per measurements of roof slab</p> <p><b>Performance Criteria 10:</b> Treat team members with respect</p> <p><b>Performance Criteria 11:</b> Maintain positive relationships to achieve common organizational goals</p> <p><b>Performance Criteria 12:</b> Get work related information from team</p> <p><b>Performance Criteria 13:</b> Maintain house keeping</p>
	<p><b>Assessment Task 2</b></p> <p><b>Performance Criteria 1:</b> Identify risk associated with job to be done</p> <p><b>Performance Criteria 2:</b> Interpret structural drawing</p> <p><b>Performance Criteria 3:</b> Select and wear the PPEs relevant to Job.</p> <p><b>Performance Criteria 4:</b> Clean and check the working condition of Tools components and accessories.</p> <p><b>Performance Criteria 5:</b> Receive the instructions from Supervisor</p>

	<p><b>Assessment Task 3</b></p> <p><b>Performance Criteria 1:</b> Identify risk associated with job to be done</p> <p><b>Performance Criteria 2:</b> Interpret structural drawing</p> <p><b>Performance Criteria 3:</b> Select and wear the PPEs relevant to Job.</p> <p><b>Performance Criteria 4:</b> Place the main bars as per drawing</p> <p><b>Performance Criteria 5:</b> Place distribution steel as per drawing</p> <p><b>Performance Criteria 6:</b> Place extra rebars as per drawing.</p> <p><b>Performance Criteria 7:</b> Bind the bars by binding wire.</p> <p><b>Performance Criteria 8:</b> Carry out the instructions of the supervisor</p> <p><b>Performance Criteria 9:</b> Clean and check the working condition of Tools components and accessories.</p>
	<p><b>Assessment Task 4</b></p> <p><b>Performance Criteria 1:</b> Identify risk associated with job to be done</p> <p><b>Performance Criteria 2:</b> Interpret structural drawing</p> <p><b>Performance Criteria 3:</b> Select and wear the PPEs relevant to Job.</p> <p><b>Performance Criteria 4:</b> Select the spacer</p> <p><b>Performance Criteria 5:</b> Place spacer as per design</p> <p><b>Performance Criteria 6:</b> Protect the Steel fixing &amp; erecting fitting, component and tools from dust &amp; moisture to avoid corrosion</p> <p><b>Performance Criteria 7:</b> Adopt communication skills, which are designed in a team.</p> <p><b>Performance Criteria 8:</b> Identify problems in communication with a team</p>



## Observation Checklist

<b>Assessment Task 1</b>	<b>Description of Assessment Task 1</b>			
	Perform cutting of rebars assigned by assessor.			
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Interpret bar bending schedule			
2.	Interpret structural drawing			
3.	Select the tools as per job requirement.			
4.	Identify risk associated with job to be done			
5.	Select and wear the PPEs relevant to Job			
6.	Straighten the rebars			
7.	Separate the rebars as per bar bending schedule of roof			
8.	Measure and mark the rebars as per requirements			
9.	Cut the rebars as per measurements of roof slab			
10.	Treat team members with respect			
11.	maintain positive relationships to achieve common organizational goals			
12.	Get work related information from team			
13.	Maintain housekeeping			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

<b>Assessment Task 2</b>		<b>Description of Assessment Task 2</b>		
		Perform bending of rebars as per job given by assessor.		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Identify risk associated with job to be done			
2.	Interpret structural drawing			
3.	Select and wear the PPEs relevant to Job.			
4.	Clean and check the working condition of Tools components and accessories.			
5.	Receive the instructions from Supervisor			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

<b>Assessment Task 3</b>		<b>Description of Assessment Task 3</b>		
		Perform placing and binding of rebars assigned by assessor.		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Identify risk associated with job to be done			
2.	Interpret structural drawing			
3.	Select and wear the PPEs relevant to Job.			
4.	Place the main bars as per drawing			
5.	Place distribution steel as per drawing			
6.	Place extra rebars as per drawing			
7.	Bind the bars by binding wire.			
8.	Carry out the instructions of the supervisor			
9.	Clean and check the working condition of Tools components and accessories			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 4		Description of Assessment Task 4		
		Perform placing of spacers as per instruction given by assessor.		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Identify risk associated with job to be done			
2.	Interpret structural drawing			
3.	Select and wear the PPEs relevant to Job.			
4.	Select the spacer			
5.	Place spacer as per design			
6.	Protect the Steel fixing & erecting fitting, component and tools from dust & moisture to avoid corrosion			
7.	Adopt communication skills, which are designed in a team.			
8.	Identify problems in communication with a team			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		



**Questions** (Candidate confidently answered questions correctly and demonstrated understanding of the topics and their application)

<b>3.</b> Steps to calculate the length of rebar in slab.	
<b>4.</b> What is the formula for effective depth D in slab	
<b>5.</b> Comprehend personal protective equipment (PPE)	
<b>6.</b> Define one way slab	
<b>7.</b> What is effective communication	
<b>8.</b> Define clarity in communication.	
<b>9.</b> Enlist non-verbal communication techniques?	
<b>10.</b> Define PPE's	
<b>11.</b> Enlist the tools used in steel fixing	

## ANSWER KEY

Sr.	Answers
1.	A slab is a structural element, made of concrete, that is used to create flat horizontal surfaces such as floors, roof decks and ceilings
2.	The two-way slab is a slab which is generally supported on all sides of walls or beams, and whose length to breadth ratio is less than two and it twists or bends in both direction
3.	Deduct the concrete cover and hooks from the total length.
4.	'D' (Depth of slab- Top cover- Bottom cover)
5.	PPE is equipment that will protect the user against health or safety risks at work.
6.	The one-way slab is a slab, which is supported by parallel walls or beams, and whose length to breadth ratio is equal to or greater than two and it bends in only one direction
7.	Effective Communication is defined as the ability to convey information to another effectively and efficiently.
8.	<ul style="list-style-type: none"><li>• Clarity implies emphasizing on a specific message or goal at a time, rather than trying to achieve too much at once</li></ul>
9.	<ul style="list-style-type: none"><li>• Body movement and posture. ...</li><li>• Gestures.</li><li>• Eye contact.</li><li>• Touch.</li><li>• Space.</li><li>• Voice.</li></ul>
10.	Personnel Protective Equipment's
11.	Steel fixers use a variety of hand and power tools, including industrial wire or bolt cutters, guillotines and power saw.

# **Assessment Evidence Guide**

**For**

## **“Assistant Steel Fixer/ Erector”**

**Level-2**

**Execute Steel Work in Stairs for Domestic  
Building**

**(Formative Assessment)**



**National Vocational & Technical  
Training Commission**

## Instruction Sheet for the Candidate

<b>Title of Qualification:</b> National Vocational Certificate Level 2 in Steel Fixer& Erector(Assistant Steel Fixer/Erector)	<b>CS Code:</b>	<b>Level:</b> 2	<b>Version:</b> 01
<b>Competency Standard Title:</b> Execute steel work in stairs for domestic building  Maintain Steel Fixing Tools, Equipment and Materials  Perform Basic Communication Skills  Follow Safety Rules at Site	<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 giventime frame (for practical demonstration &amp; assessment):</b></p> <p><b>Assessment Task 1:</b> Candidate is required to perform cutting of rebars assigned by assessor.</p> <p><b>Assessment Task 2:</b> Candidate is required to perform placing and binding the rebars as per job given by assessor.</p> <p><b>And complete:</b></p> <ol style="list-style-type: none"> <li>1. Knowledge assessment test (Written or Oral)</li> <li>2. Portfolios at the time of assessment (if any)</li> </ol>

<p>Minimum Evidence Required</p>	<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>Performance Criteria 1:</b> Interpret bar bending schedule</p> <p><b>Performance Criteria 2:</b> Interpret structural drawing</p> <p><b>Performance Criteria 3:</b> Select the tools as per job requirement.</p> <p><b>Performance Criteria 4:</b> Identify risk associated with job to be done</p> <p><b>Performance Criteria 5:</b> Select and wear PPEs relevant to Job.</p> <p><b>Performance Criteria 6:</b> Straightens the rebars</p> <p><b>Performance Criteria 7:</b> Separate main and distribution rebars</p> <p><b>Performance Criteria 8:</b> Mark the points for cutting the rebars as per measurements.</p> <p><b>Performance Criteria 9:</b> Prepare required rings for beam by cutting and bending of rebars</p> <p><b>Performance Criteria 10:</b> Treat team members with respect</p> <p><b>Performance Criteria 11:</b> Maintain positive relationships to achieve common organizational goals</p> <p><b>Performance Criteria 12:</b> Resolve Communication barrier through discussion and mutual agreement</p> <p><b>Performance Criteria 13:</b> Clean and check the working condition of Tools components and accessories</p>
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**Assessment Task 2**

**Performance Criteria 1:** Interpret bar bending schedule

**Performance Criteria 2:** Interpret structural drawing

**Performance Criteria 3:** Identify risk associated with job to be done

**Performance Criteria 4:** Select the tools as per job requirement

**Performance Criteria 5:** Select and wear the PPEs relevant to Job.

**Performance Criteria 6:** Place the rebars

**Performance Criteria 7:** Bind the rebars

**Performance Criteria 8:** Place spacer as per requirement

**Performance Criteria 9:** Clean and check the working condition of Tools components and accessories.

**Performance Criteria 10:** Receive the instructions from Supervisor

**Performance Criteria 11:** Identify basic safety signs and symbols

**Performance Criteria 12:** Report unsafe condition to immediate supervisor (shift position)



## Observation Checklist

Assessment Task 1		Description of Assessment Task 1		
		Perform cutting of rebars assigned by assessor.		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Interpret bar bending schedule			
2.	Interpret structural drawing			
3.	Select the tools as per job requirement.			
4.	Identify risk associated with job to be done			
5.	Select and wear PPEs relevant to Job.			
6.	Straightens the rebars			
7.	Separate main and distribution rebars			
8.	Mark the points for cutting the rebars as per measurements.			
9.	Prepare required rings for beam by cutting and bending of rebars			
10.	Treat team members with respect			
11.	Maintain positive relationships to achieve common organizational goals			
12.	Resolve Communication barrier through discussion and mutual agreement			
13.	Clean and check the working condition of Tools components and accessories			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

<b>Assessment Task 2</b>		<b>Description of Assessment Task 2</b>		
		Perform placing and binding the rebars as per job given by assessor.		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Interpret bar bending schedule			
2.	Interpret structural drawing			
3.	Identify risk associated with job to be done			
4.	Select the tools as per job requirement			
5.	Select and wear the PPEs relevant to Job.			
6.	Place the rebars in waist slab of stairs as per drawing			
7.	Bind the stirrups			
8.	Place spacer as per requirement			
9.	Clean and check the working condition of Tools components and accessories.			
10.	Receive the instructions from Supervisor			
11.	Identify basic safety signs and symbols			
12.	Report unsafe condition to immediate supervisor (shift position)			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		



**Questions** (Candidate confidently answered questions correctly and demonstrated understanding of the topics and their application)

3. Enlist PPE's for construction work	
4. What is the purpose of personal protective equipment (PPE)	
5. What are different types of measuring angles?	
6. Enlist types of stairs	
7. Define cohesiveness in effective communication	
8. Enlist any five Verbal communication techniques?	
9. List of Health and safety measures for steel fixer?	
10. Define steel fixing?	

## ANSWER KEY

Sr.	Answers
1.	<i>Bar bending schedule</i> is the list of all the reinforcement bars for the reinforced concrete work of any construction.
2.	The riser is the vertical surface of the stair. The tread on the other hand is the horizontal surface of the stair and the part of the stair you step on.
3.	<ul style="list-style-type: none"> <li>• Helmet</li> <li>• Safety shoes</li> <li>• Safety goggles</li> <li>• Gloves</li> <li>• Safety jackets</li> <li>• Ear plug</li> <li>• Face mask</li> <li>• Face shields</li> </ul>
4.	PPE is equipment that will protect the user against health or safety risks at work.
5.	<ul style="list-style-type: none"> <li>• Right angle</li> <li>• Obtuse angle</li> <li>• Straight: angle</li> </ul>
6.	<ul style="list-style-type: none"> <li>• Straight flight Stairs.</li> <li>• L Shaped Stairs.</li> <li>• U Shaped Stairs.</li> <li>• Spiral Stairs.</li> <li>• Curved Stairs.</li> <li>• Cantilever Stairs.</li> <li>• Split Staircase</li> </ul>
7.	Cohesiveness is the extent to which team members stick together and remain united in the pursuit of a common goal
8.	<ul style="list-style-type: none"> <li>• Active listening</li> <li>• Clarity and conciseness</li> <li>• Confidence</li> <li>• Empathy</li> <li>• Friendliness</li> <li>• Open-mindedness</li> <li>• Giving and soliciting feedback</li> <li>• Confidence</li> <li>• Respectfulness</li> </ul>
9.	<ul style="list-style-type: none"> <li>• Exposure to electricity</li> <li>• Overhead cables</li> <li>• Falls from height</li> <li>• Risk of eye injury from flying particles and dust</li> <li>• Manual handling activities</li> <li>• Exposure to noise,</li> <li>• Hand and foot injury</li> </ul>
10.	Steel fixing is shaping and fitting the steel

**Assessment Evidence  
Guide**

**For**

**“Assistant Steel Fixer/  
Erector”**

**Level-2**

**Execute Steel Work in Arches**

**(Formative Assessment)**



**National Vocational & Technical  
Training Commission**

## Instruction Sheet for the Candidate

<b>Title of Qualification:</b> National Vocational Certificate Level 2 in Steel Fixer& Erector(Assistant Steel Fixer/Erector)	<b>CS Code:</b>	<b>Level:</b> 2	<b>Version:</b> 01
<b>Competency Standard Title:</b> Execute Steel Work in Arches  Maintain Steel Fixing Tools, Equipment and Materials  Perform Basic Communication Skills  Follow Safety Rules at Site	<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 style="text-align: center;"><b>Assessment Task 1:</b> Candidate is required to perform cutting of rebars and tie bars assigned by assessor.</p> <p><b>Assessment Task 2:</b> Candidate is required to perform placing and binding the rebars as per job given by assessor.</p> <p><b>And complete:</b></p> <ol style="list-style-type: none"> <li>1. Knowledge assessment test (Written or Oral)</li> <li>2. Portfolios at the time of assessment (if any)</li> </ol>

<p>Minimum Evidence Required</p>	<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>Performance Criteria 1:</b> Interpret bar bending schedule</p> <p><b>Performance Criteria 2:</b> Interpret structural drawing</p> <p><b>Performance Criteria 3:</b> Select the tools as per job requirement.</p> <p><b>Performance Criteria 4:</b> Identify risk associated with job to be done</p> <p><b>Performance Criteria 5:</b> Select and wear the PPEs relevant to Job.</p> <p><b>Performance Criteria 6:</b> Straighten the rebars</p> <p><b>Performance Criteria 7:</b> Separate the rebars according to their diameters</p> <p><b>Performance Criteria 8:</b> Measure the rebars as per bar bending schedule</p> <p><b>Performance Criteria 9:</b> Mark the rebars</p> <p><b>Performance Criteria 10:</b> Cut the rebars</p> <p><b>Performance Criteria 11:</b> Bend the main rebars as per bar bending schedule</p> <p><b>Performance Criteria 12:</b> Make the bundles of rebars and tag them</p> <p><b>Performance Criteria 13:</b> Treat team members with respect</p> <p><b>Performance Criteria 14:</b> Maintain positive relationships to achieve common organizational goals</p> <p><b>Performance Criteria 15:</b> Identify problems in communication with a team</p> <p><b>Performance Criteria 16:</b> Clean and check the working condition of Tools components and accessories.</p> <p><b>Performance Criteria 17:</b> Report unsafe condition to immediate supervisor (shift position)</p>
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**Assessment Task 2**

**Performance Criteria 1:** Select the tools as per job requirement.

**Performance Criteria 2:** Identify risk associated with job to be done

**Performance Criteria 3:** Select and wear the PPEs relevant to Job.

**Performance Criteria 4:** Transport the bundle of rebars to site

**Performance Criteria 5:** Place the rebars according to the drawing

**Performance Criteria 6:** Bind the rebars

**Performance Criteria 7:** Place spacers as per requirement

**Performance Criteria 8:** Clean and check the working condition of Tools components and accessories.

**Performance Criteria 9:** Receive the instructions from Supervisor



## Observation Checklist

<b>Assessment Task 1</b>	<b>Description of Assessment Task 1</b>			
	Perform cutting of rebars and tie bars assigned by assessor.			
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Interpret bar bending schedule			
2.	Interpret structural drawing			
3.	Select the tools as per job requirement			
4.	Identify risk associated with job to be done			
5.	Select and wear the PPEs relevant to Job.			
6.	Straighten the rebars			
7.	Separate the rebars according to their diameters			
8.	Measure the rebars as per bar bending schedule			
9.	Mark the rebars			
10.	Cut main and tie rebars			
11.	Bend the main rebars as per bar bending schedule			
12.	Make the bundles of rebars and tag them			
13.	Treat team members with respect			
14.	Maintain positive relationships to achieve common organizational goals			
15.	Identify problems in communication with a team			
16.	Clean and check the working condition of Tools components and accessories.			
17.	Report unsafe condition to immediate supervisor (shift position)			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

<b>Assessment Task 2</b>		<b>Description of Assessment Task 2</b>		
		Perform placing and binding the rebars as per job given by assessor.		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Select the tools as per job requirement.			
2.	Identify risk associated with job to be done			
3.	Select and wear the PPEs relevant to Job.			
4.	Transport the bundle of rebars to site			
5.	Place the rebars according to the drawing			
6.	Bind the rebars			
7.	Place spacers as per requirement			
8.	Clean and check the working condition of tools components and accessories.			
9.	Receive the instructions from Supervisor			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		



**Questions** (Candidate confidently answered questions correctly and demonstrated understanding of the topics and their application)

3. What are the uses of different dia of steel used in construction	
4. Define intrados/soffit	
5. Define crown of arches	
6. Define abutments/piers in arches	
7. Enlist different types of rebar bending tools	
8. Enlist different types of rebar cutting tools	
9. Enlist different types of arches according to shape	
10. Define concreteness in effective communication	
11. Enlist any four Verbal communication techniques?	
12. Enlist PPE's for eye protection	
13. Enlist PPE's for ear protection	
14. What does a steel fixer do?	

## ANSWER KEY

Sr.	Answers
1.	A Curved member that is used to span an opening and to support loads from above.
2.	<ul style="list-style-type: none"> <li>• 5 mm,6 mm, 8 mm, 42 mm, 62mm and 128 mm diameter bars</li> </ul>
3.	<ul style="list-style-type: none"> <li>• 5 mm diameter bars are available which are used for Non-structural purpose.</li> <li>• 6 mm, 8 mm , 42 mm bars can be obtained by a pre-order from a supplier.</li> <li>• Bars of dia 62mm and 128 mm diameter has to be order specially from steel plants.</li> </ul>
4.	It is an under surface of an arch
5.	It is the highest part of arch
6.	It is the part of arch on which it rests
7.	<ul style="list-style-type: none"> <li>• Bar bending table</li> <li>• Bending rods</li> </ul>
8.	<ul style="list-style-type: none"> <li>• Disc cutter</li> <li>• Pliers</li> <li>• Chisel</li> <li>• Hammer</li> </ul>
9.	semicircular arches, Flat arches, horseshoe arches, and segmental arches,
10.	Be specific in your meaning by using precise words. Avoid terms that are vague or abstract
11.	<ul style="list-style-type: none"> <li>• Active listening</li> <li>• Clarity and conciseness</li> <li>• Confidence</li> <li>• Empathy</li> <li>• Friendliness</li> <li>• Open-mindedness</li> <li>• Giving and soliciting feedback</li> <li>• Confidence</li> <li>• Respectfulness</li> </ul>
12.	<ul style="list-style-type: none"> <li>• General safety glasses, laser safety glasses, chemical splash goggles and impact goggles and face shields.</li> </ul>
13.	<ul style="list-style-type: none"> <li>• Ear plugs</li> <li>• Ear muffs</li> </ul>
14.	Steel fixers shape and fit the steel bars or mesh structures that are used to reinforce concrete in construction projects