Skills for Employment Investment Program (SEIP)

ASSESSMENT TOOL

FOR

STEEL BINDING AND FABRICATION

(CONSTRUCTION SECTOR)

Finance Division, Ministry of Finance
Government of the People's Republic of Bangladesh

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PART A – THE ASSESSOR

Instructions to Assessor

Assessment is the process of identifying a candidate's skills and knowledge set against the industry established standards in the workplace. It requires the candidate to consistently and over time demonstrate skills, knowledge and attitude that enable confident completion of workplace tasks in a variety of situations.

In judging assessment evidence, the assessor must ensure that the evidence is:

- authentic (the candidate's own work)
- valid (directly related to the current version of the endorsed competency standard)
- reliable (show that the candidate consistently meets the endorsed unit of competency)
- current (reflects the candidate's current capacity to perform the aspect of work covered by the endorsed unit of competency)
- sufficient (covers the full range of elements in the relevant unit of competency)

There are a number of assessment methods that may be employed including but not limited to:

- written examination
- oral questioning
- practical demonstration

A single unit of competency may be assessed or a group of units of competency may be assessed, either in an actual workplace or a simulated workplace environment.

Conducting Assessment

Prior to commencement of assessment, candidates must have the tasks clearly explained to them. Also, the assessor should provide candidates with clear advice and information about the:

- date, time and place for assessment
- structure of assessment
- number of times performance must be demonstrated or observed
- amount or type of assistance candidates can expect
- assessment environment
- resources required for assessment
- performance standards or benchmarks relevant to the qualification

As well as informing the candidate of what they will be required to do during the assessment, the assessor will also need to explain what evidence they will need to provide in response to the various assessment tasks.

If a candidate is required to submit evidence, any explanation must include specific guidance on:

- what to include as evidence
- how to present the evidence
- how to submit the evidence and to whom

Assessing Competence

Competency-based assessment does not award grades, but simply identifies if the candidate has the skills, knowledge and attitudes to undertake the required task to the specified standard.

Therefore, when assessing competency an assessor has two possible results (assessment decisions) that can be awarded:

- Competent (C)
- Not Yet Competent (NYC)

Competent (C)

If the candidate is able to successfully answer and demonstrate what is required to the expected standard of the assessment criteria, they will be deemed as 'Competent'.

The assessor will award 'Competent' if they feel the candidate has the necessary skills, knowledge and attitudes in all assessment tasks for a given package.

Not Yet Competent (NYC)

If the candidate is unable to answer and demonstrate competency to the expected standard, they will be deemed to be 'Not Yet Competent'.

This does not mean the candidate will need to complete all the assessment tasks again. When applying for reassessment, the focus will be on the specific assessment tasks that were not performed to the required standard.

The candidate may be required to:

(a) undertake further training or instruction

(b) undertake the specific assessment task again until they are deemed to be competent

Recording Assessment Information

When all assessment tasks are concluded, the evidence summary sheet should be completed, signed by all parties, and any outstanding activities or issues actioned.

The assessor should ensure that all appropriate forms are completed and signed by all parties.

CHECKLIST FOR ASSESSOR		
Prior to the assessment I have:	**Tick (✓)**	**Remarks**
Ensured the candidate is informed about the venue and schedule of assessment.		
Received current copies of the assessment criteria to be assessed, assessment plan and evidence plan.		
Reviewed the assessment criteria and evidence plan to ensure I clearly understood the instructions and the requirements of the assessment process.		
Identified and accommodated any special needs of the candidate.		
Checked the set-up and resources for the assessment.		
During the assessment I have:		
Introduced myself and confirmed identities of candidates.		
Collected the admission slips.		
Put candidates at ease by being friendly and helpful.		
Checked completed self-assessment guide.		
Explained to candidates the purpose, context and benefits of the assessment.		
Ensured candidates understood the assessment process and the assessment procedure.		
Provided candidates with an overview of the assessment criteria to be used.		
Gave specific and clear instructions to the candidates.		
Observed carefully the specified time limits provided in the assessment package.		
Stayed at the assessment area during the entire duration of the assessment activity.		
Ensured notes are made on unusual conditions or situations during the assessment and include these in the report.		
Did not provide any assistance during the assessment or indicated in any way whether the candidate is or is not performing the activity correctly (intervened only for health and safety reasons).		

Implemented the evidence gathering process and ensured its validity, reliability, fairness and flexibility.		
Collected appropriate evidence and matched relevance to the elements, performance criteria, range of variables and evidence guide in the relevant units of competency.		
Explained the results reporting procedure to the candidate.		
Encouraged candidates to seek clarifications if in doubt about the pre- and post-assessment activity procedures.		
Asked candidates for feedback on the assessment.		
Explained legal, health and safety, and ethical issues, if applicable.		
After the assessment I have:		
Provided feedback on the assessment decision. This includes the following: ▪ clear and constructive feedback on the assessment decision ▪ information on ways of addressing any identified gaps in competency revealed by the assessment ▪ opportunity to discuss the assessment process and outcome ▪ information on reassessment process (if necessary) ▪ information on appeal (if necessary)		
Prepared the necessary assessment reports. This includes the following: ▪ record the assessment decision using the prescribed rating sheet ▪ maintain records of the assessment procedures, evidence collected and assessment decision ▪ endorse assessment decision to BTEB ▪ prepare recommendations for the issuance of certificate		
Thanked candidate for participating in the assessment.		

Assessment Evidence Guide

The purpose of assessment is to confirm that an individual can perform to the standards expected by in the workplace, as expressed in the competency standards.

To attain the certificate of **Steel Binding and Fabrication**, a candidate must demonstrate competent skill and knowledge in all the units of competency listed below. Upon successful completion of all assessment activities, a candidate shall be awarded with a certificate.

CODE	UNIT OF COMPETENCY
Generic Competencies	
SEIP-CON-STE-01-G	Perform computations using basic mathematical concepts
SEIP-CON-STE-02-G	Apply occupational health and safety (OHS) practices in the workplace
SEIP-CON-STE-03-G	Communicate in English in the workplace
SEIP-CON-STE-04-G	Work in a self-directed team
Sector-specific Competencies	
SEIP-CON-STE-01-S	Translate drawings, plans and specifications
SEIP-CON-STE-02-S	Work with hand tools and power tools
SEIP-CON-STE-03-S	Carry out measurements and calculations
Occupation-specific Competencies	
SEIP-CON-STE-01-O	Perform preparation works
SEIP-CON-STE-02-O	Perform fabrication works
SEIP-CON-STE-03-O	Perform assembly of prefabricated steel works
SEIP-CON-STE-04-O	Perform steel re-bar installation works
SEIP-CON-STE-05-O	Perform basic construction levelling procedures
SEIP-CON-STE-06-O	Perform formworks installation

Assessment Evidence Plan

An assessment evidence plan is a document that assists in establishing what evidence needs to be collected by the assessor to ensure that the candidate meets all the appropriate requirements of the competency standard. It usually contains a record of:

- evidence requirements as set out in the competency standard
- who will collect the evidence
- time period needed to collect the evidence

Occupation:	Steel Binding and Fabrication					
Unit Name:	Perform computations using basic mathematical concepts					
Unit Code:	SEIP-CON-STE-01-G					
Assessment Method:	**P**	**O**	**W**			
	Performance *(including demonstration and observation)*	Oral questioning	Written examination *(including short-answer, multiple choice, and true or false questions)*			
Element	**Performance Criteria**			**P**	**O**	**W**
1. Identify calculation requirements in the workplace	**1.1.** Calculation requirements are identified from workplace information.			√		√
2. Select appropriate mathematical methods/concepts for calculation	**2.1.** Appropriate method is selected to carry out the calculation requirement.					√
3. Use tool/instrument to perform calculations	**3.1.** Calculations are completed using appropriate tools and instruments.			√		√

Occupation:	Steel Binding and Fabrication					
Unit Name:	Apply occupational health and safety (OHS) practices in the workplace					
Unit Code:	SEIP-CON-STE-02-G					
Assessment Method:	**P**	**O**	**W**			
	Performance *(including demonstration and observation)*	Oral questioning	Written examination *(including short-answer, multiple choice, and true or false questions)*			
Element	**Performance Criteria**			**P**	**O**	**W**
1. Identify OHS policies and procedures	**1.1.** OHS policies and safe operating procedures are read and understood.					√
	1.2. Safety signs and symbols are identified and followed.			√		
	1.3. Emergency response, evacuation procedures and other contingency measures are determined.					√

2. Apply personal health and safety practices	**2.1.** OHS policies and procedures are followed and practiced.	√		√
	2.2. Personal protective equipment is selected and used.	√		
	2.3. Personal hygiene is maintained.	√		
3. Report hazards and risks	**3.1.** Hazards and risks are identified, assessed and controlled.	√	√	
	3.2. Incidents arising from hazards and risks are reported to authority.		√	
	3.3. Corrective actions are implemented to correct unsafe conditions in the workplace.	√		√
4. Respond to emergencies	**4.1.** Alarms and warning devices are responded.			√
	4.2. Emergency response plans and procedures are implemented.		√	
	4.3. First aid procedure is applied during emergency situations.	√		

Occupation:	Steel Binding and Fabrication					
Unit Name:	Communicate in English in the workplace					
Unit Code:	SEIP-CON-STE-03-G					
Assessment Method:	**P**	**O**	**W**			
	Performance *(including demonstration and observation)*	Oral questioning	Written examination *(including short-answer, multiple choice, and true or false questions)*			
Element	**Performance Criteria**			**P**	**O**	**W**
1. Read and understand workplace documents in English	**1.1.** Workplace documents are read and understood.					√
	1.2. Visual information is interpreted.				√	
2. Write simple workplace communications in English	**2.1.** Simple routine workplace documents are prepared using key words, phrases, simple sentences and visual aids are prepared.					√
	2.2. Key information is written in the appropriate places in standard forms.					√
3. Listen and comprehend to English conversations	**3.1.** Active listening is demonstrated.			√	√	
4. Perform conversations in English language	**4.1.** Conversation is performed in English with peers, customers and management to the required workplace standard.			√	√	

Occupation:	Steel Binding and Fabrication				
Unit Name:	Operate in a self-directed team				
Unit Code:	SEIP-CON-STE-04-G				
Assessment Method:	**P**	**O**	**W**		
	Performance *(including demonstration and observation)*	Oral questioning	Written examination *(including short-answer, multiple choice, and true or false questions)*		
Element	**Performance Criteria**			**P**	**O**	**W**
1. Identify team goals and work processes	**1.1.** Team goals and collaborative decision-making processes ate identified.					√
	1.2. Roles and responsibilities of team members are identified.				√	
	1.3. Relationships within the team and with other workers are identified.				√	
2. Communicate and cooperate with team members	**2.1.** Effective interpersonal skills are used to interact with team members and to contribute to activities and objectives			√		√
	2.2. Formal and informal forms of communication are used effectively to support team achievement.			√		√
	2.3. Diversity in character is respected and valued in team functioning.			√	√	
	2.4. Views and opinions of other team members are understood and valued in team functioning			√	√	
	2.5. Workplace terminology is used correctly to assist communication.			√		√
3. Work as a team member	**3.1.** Duties, responsibilities, authorities, objectives and task requirements are identified and clarified with team.					√
	3.2. Tasks are performed in accordance with organisational and team requirements, specifications and workplace procedures.			√		√
	3.3. Team member's support with other members is made to ensure team achieves goals, awareness and requirements.			√	√	
	3.4. Agreed reporting lines are followed using standard operating procedure.			√		√
4. Solve problems as team member	**4.1.** Current and potential problems faced by team are identified.					√
	4.2. A solution to the problem is identified.				√	
	4.3. Problems are solved effectively and the outcome of the implemented solution is evaluated.				√	

Occupation:	Steel Binding and Fabrication					
Unit Name:	Translate drawings, plans and specifications					
Unit Code:	SEIP-CON-STE-01-S					
Assessment Method:	**P**	**O**	**W**			
	Performance *(including demonstration and observation)*	Oral questioning	Written examination *(including short-answer, multiple choice, and true or false questions)*			
Element	**Performance Criteria**			**P**	**O**	**W**
1. Carry out basic engineering drawings applied in construction	**1.1.** Basic shapes and objects are sketched.					√
	1.2. Ability to properly use manual drafting equipment is demonstrated.			√		√
	1.3. Geometrical shapes utilizing manual drafting equipment is created.				√	
	1.4. Manual lettering is demonstrated in accordance with workplace standard.			√		√
2. Access information from manuals, designs and plans	**2.1.** Appropriate manuals are identified and accessed.					√
	2.2. Version and date of the manual are checked to ensure up-to-date specifications of tools, equipment, materials and procedures.			√		√
3. Interpret drawings and specifications form manuals, designs and plans	**2.1.** Relevant drawings and specifications are correctly recognized from manuals, designs and plans.					√
	2.2. Terms and abbreviations are recognized.					√
	2.3. Signs and symbols are interpreted.				√	
4. Store manuals, designs and plans	**2.1.** Manuals, designs and plans are collected and packed.				√	
	4.2. Manuals, designs and plans are stored to prevent damage, and ready access and updating of information when required.				√	

Occupation:	Steel Binding and Fabrication					
Unit Name:	Work with hand tools and power tools					
Unit Code:	SEIP-CON-STE-02-S					
Assessment Method:	**P**	**O**	**W**			
	Performance *(including demonstration and observation)*	Oral questioning	Written examination *(including short-answer, multiple choice, and true or false questions)*			
Element	**Performance Criteria**			**P**	**O**	**W**
	1.1. Appropriate tools are selected.			√		

1. Inspect hand tools and power tools for usability	**1.2.** Application of tools to job requirements is determined.	√		
	1.3. Usability of tools are checked and verified.	√		√
	1.4. Hand tools and power tools are prepared.	√		
	1.5. Sources of power supply for power tools identified.	√	√	
2. Use hand tools properly and safely	**2.1.** Appropriate hand tool for the job is used.	√		
	2.2. Proper and safe use/operation is applied in the different types of hand tools.	√		
	2.3. Safety precautions are observed when using hand tools.	√		√
	2.4. Unsafe or faulty tools are identified and marked for repair.	√	√	
3. Operate power tools properly and safely	**3.1.** Power supply outlet and electrical cord are inspected for safe use in accordance with established workplace safety requirements.	√		√
	3.2. Proper sequence of operation is applied when using power tools to produce desired results.	√	√	
	3.3. Power tools are used safely in accordance to manufacturer's operating specification.	√		
4. Clean/maintain hand tools and power tools after use	**4.1.** Dust and foreign matters are removed from power tools in accordance to workplace standard.	√		
	4.2. Condition of tool is checked after use.	√		
	4.3. Appropriate lubricant is applied after use and prior to storage.	√		
	4.4. Measuring tools are checked and calibrated.	√		
	4.5. Defective tools, instruments, power tools and accessories are inspected and corrected or replaced.	√		

Occupation:	Steel Binding and Fabrication				
Unit Name:	Carry out measurements and calculations				
Unit Code:	SEIP-CON-STE-03-S				
Assessment Method:	**P**	**O**	**W**		
	Performance *(including demonstration and observation)*	Oral questioning	Written examination *(including short-answer, multiple choice, and true or false questions)*		
Element	**Performance Criteria**			**P**	**O**	**W**
1. Check usability of measuring devices	**1.1.** Appropriate measuring device is selected for the job.			√		

	1.2. Applications of measuring device are determined.	√		
	1.3. Usability of measuring device is checked and verified.	√		√
	1.4. Measuring device is prepared for use.	√		
2. Carry-out accurate construction work measurements	**2.1.** Working drawings are analysed.			√
	2.2. Measurements are obtained using appropriate measuring device in accordance with workplace requirements.	√		√
	2.3. Systems of measurements are identified and converted where necessary.	√		√
	2.4. Measurement results are confirmed and recorded.	√		√
3. Execute simple construction work calculations	**3.1.** Simple calculations involving four basic mathematical operations are executed.			√
	3.2. Other calculation operations are used to complete tasks in construction works with workplace requirements.		√	
	3.3. Appropriate formulas for calculating quantities of materials are selected.			√
	3.4. Calculations are performed and verified.	√		√
	3.5. Material quantities are calculated in accordance with workplace requirements.	√		
	3.6. Results are interpreted and communicated to authority.	√		
5. Clean and maintain measuring instruments	**4.1** Dust and foreign matters are removed from measuring instrument.	√		
	4.2 Condition of measuring instruments are checked and calibrated in accordance with instrument manufacturer's specifications.	√		
	4.3 Apply appropriate lubricant after use and prior to storage.	√		
	4.4 Instruments are stored in accordance to workplace procedure.	√		

Occupation:	Steel Binding and Fabrication		
Unit Name:	Perform preparation works		
Unit Code:	SEIP-CON-STE-01-O		
Assessment Method:	**P**	**O**	**W**
	Performance *(including demonstration and observation)*	Oral questioning	Written examination *(including short-answer, multiple choice, and true or false questions)*

Element	Performance Criteria	P	O	W
1. Acquire job assignment from lead man	**1.1.** Job assignment is received from immediate superior based on work priority.			√
	1.2. Details about job assignment are received through appropriate means in accordance with company practices.		√	
2. Read and interpret construction drawing	**2.1.** Symbols and abbreviations for steel work are recognized based on applicable construction drawings/plans.			√
	2.2. Detailed work specifications are interpreted in accordance with applicable construction drawings and plans.	√		
	2.3. Re-bar materials are identified from design specifications.	√		
3. Check work area	**3.1.** Work area is arranged in accordance with work requirements and OHS guidelines and procedures.	√		
	3.2. Unused/excess materials, debris and other obstacles are removed in accordance with workplace and safety requirements.	√		
	3.3. Building lines determined by the surveyor are checked to ensure alignment of structures based on approved plans/drawings.	√		
4. Prepare hand tools, equipment and materials	**4.1.** Hand tools and equipment are identified and gathered in accordance with workplace procedures.	√	√	
	4.2. Hand tools, equipment and PPEs are checked in accordance with manufacturer's guidelines.	√	√	
	4.3. Hand tools and equipment are maintained and stored in compliance with OHS requirements.	√		
	4.4. Bending table is assembled.	√		
	4.5. Bending and cutting equipment is set-up and get ready.	√		
	4.6. Materials are hauled to work site and stationed in accordance with workplace requirements.	√		

Occupation:	Steel Binding and Fabrication		
Unit Name:	Perform fabrication works		
Unit Code:	SEIP-CON-STE-02-O		
Assessment Method:	**P**	**O**	**W**
	Performance *(including demonstration and observation)*	Oral questioning	Written examination *(including short-answer, multiple choice, and true or false questions)*

Element	Performance Criteria	P	O	W

1. Cut steel re-bars	**1.1.** Cutting tools/equipment are selected in accordance with steel re-bar size and type.			√
	1.2. Steel re-bars are accurately measured and marked ready for cutting.	√		
	1.3. Steel re-bars are cut using appropriate cutting tools/ equipment based on cutting list.	√		
	1.4. Cut steel re-bars are arranged in designated area according to workplace requirements.	√		
	1.5. Excess steel re-bars are gathered and disposed in accordance with workplace procedures.	√		
	1.6. Relevant OHS guidelines are applied at all times.	√		
2. Bend main bars using manual benders	**2.1.** Appropriate bending tools and equipment are prepared in accordance with the work requirements.	√		
	2.2. Bending forms/jigs are installed according to cutting list specifications.	√		
	2.3. Main bars are manually bended according to required bar shapes and quantity.	√		
	2.4. Bended main bars are stocked pile at the designated storage area.		√	
	2.5. Relevant OHS guidelines are applied at all times.	√		
3. Bend main bar using bending machine	**3.1.** Bending machine components are checked and maintained in accordance with manufacturer's specifications.			√
	3.2. Bending guides/forms are set based on re-bar size and shape.	√		
	3.3. Main steel bars are bended according to required shape and quantity.	√		
	3.4. Bended main steel bars are stock-piled at the designated storage area.		√	
	3.5. Relevant OHS guidelines are applied at all times.	√		
4. Bend stirrups using manual bender	**4.1.** Appropriate bending tools and equipment are prepared in accordance with the work requirements.	√		
	4.2. Stirrup bending guides/forms are installed according to cutting list specifications.	√		
	4.3. Stirrups are manually bended according to required stirrup shapes and quantity.	√		
	4.4. All bended stirrups are grouped according to shapes or use.			
	4.4. Relevant OHS guidelines are applied at all times.	√		

5. Bend stirrups using bending machine	**5.1.** Bending machine components are checked and maintained in accordance with manufacturer's specifications.	√		
	5.2. Bending guides/forms are set based on re-bar size and shape.	√		
	5.3. Stirrups are bended according to required shapes and quantity.	√		
	5.4. Bended stirrups are stocked pile at the designated storage area.		√	
	5.5. Relevant OSH guidelines are applied at all times.	√		
6. Clean/maintain the workplace	**6.1.** Tools and equipment are cleaned and stored in accordance with workplace requirements.	√		
	6.2. Work place is cleaned in accordance with workplace requirements.	√		
	6.3. Waste materials are disposed in designated/proper place.	√		

Occupation:	Steel Binding and Fabrication				
Unit Name:	Perform assembly of prefabricated steel works				
Unit Code:	SEIP-CON-STE-03-O				
Assessment Method:	**P**	**O**	**W**		
	Performance *(including demonstration and observation)*	Oral questioning	Written examination *(including short-answer, multiple choice, and true or false questions)*		
1. Assemble re-bars for columns	**1.1.** Assembly of re-bars for columns is carried out in accordance with OHS requirements.			√	
	1.2. Metal/wooden supports for main/vertical bars are prepared and assembled according to work requirements.			√	
	1.3. Size of main/vertical bars and lateral ties are selected based on structural plan, design specifications and relevant local and international construction codes.				√
	1.4. Main/vertical bars are held in position by lateral ties in accordance with the column design plan.			√	
	1.5. Spacing of main/vertical bars and lateral ties are determined in accordance with design specifications and relevant local and international construction codes.			√	
	1.6. Lateral ties are tied/welded in order to hold the main/vertical bars firmly to its designed position.			√	
	1.7. Completed column reinforcement assembly is hauled to designated storage area.				√

	1.8. Excess materials and debris are properly disposed and work area is cleaned in compliance with OHS guidelines.	√		
2. Assemble re-bars for beams	**2.1.** Assembly of re-bars for beams is carried out in accordance with OHS requirements.	√		
	2.2. Metal/wooden supports for main bars are prepared and assembled according to work requirements.	√		
	2.3. Size of main bars, extra/cut bars and closed stirrups are selected based on structural plan, design specifications and relevant local and international construction codes.		√	
	2.4. Main bars and extra/cut bars are held in position by closed stirrups in accordance with the beam design plan.	√		
	2.5. Closed stirrups are properly spaced and tied/welded in order to hold the main bars firmly to its designed position.	√		
	2.6. Completed beam reinforcement assembly is hauled to designated storage area.	√		
	2.7. Personal protective equipment and hand tools are used in accordance with safety and work requirements.	√		
	2.8. Excess materials and debris are properly disposed and work area is cleaned in compliance with OHS guidelines.	√		
3. Assemble re-bars for joists	**3.1.** Assembly of re-bars for joist is carried out in accordance with OHS requirements.	√		
	3.2. Metal/wooden supports for main bars are prepared and assembled according to work requirements.	√		
	3.3. Size of main bars, extra/cut bars and closed stirrups are selected based on structural plan, design specifications and relevant local and international construction codes.		√	
	3.4. Main bars and extra/cut bars are held in position by closed stirrups in accordance with the joists design plan.	√		
	3.5. Closed stirrups are properly spaced and tied/welded in order to hold the main bars firmly to its designed position.	√		
	3.6. Completed joist reinforcement assembly is hauled to designated storage area.	√		
	3.7. Excess materials and debris are properly disposed and work area is cleaned in compliance with OHS guidelines.	√		
4. Assemble re-bars for girders	**4.1.** Assembly of re-bars for girders is carried out in accordance with OHS requirements.	√		
	4.2. Metal/wooden supports for main bars are prepared and assembled according to work requirements.	√		

	4.3. Size of main bars, extra/cut bars and closed stirrups are selected based on structural plan, design specifications and relevant local and international construction codes.		√	
	4.4. Main bars and extra/cut bars are held in position by closed stirrups in accordance with the girder design plan.	√		
	4.5. Closed stirrups are properly spaced and tied/welded in order to hold the main bars firmly to its designed position.	√		
	4.6. Completed girder reinforcement assembly is hauled to designated storage area.	√		
	4.7. Personal protective equipment and hand tools are used in accordance with safety and work requirements.	√		
	4.8. Excess materials and debris are properly disposed and work area is cleaned in compliance with OSHA guidelines.	√		
5. Assemble re-bars for slab	**5.1.** Assembly of re-bars for slabs is carried out in accordance with OHS requirements.	√		
	5.2. Metal bed for slab fabrication is prepared in accordance with work requirements.	√		
	5.3. Size of bars is selected based on structural plan, design specifications and relevant local and international construction codes.		√	
	5.4. Slab re-bars are properly spaced and tied/welded in accordance with design specifications and relevant local and international construction codes.	√		
	5.5. Completed slab reinforcement assembly is hauled to designated storage area.	√		
	5.6. Personal protective equipment and hand tools are used in accordance with safety and work requirements.	√		
	5.7. Excess materials and debris are properly disposed and work area is cleaned in compliance with OHS guidelines.	√		
6. Assemble re-bars for board piles/pile caps	**6.1.** Assembly of re-bars for board piles/pile caps is carried out in accordance with OHS requirements.	√		
	6.2. Sizes of main bars are selected based on structural plan, design specifications and relevant local and international construction codes.		√	
	6.3. Board pile re-bars are properly spaced and tied/welded in accordance with design specifications and relevant local and international construction codes.	√		

	6.4. Completed board pile reinforcement assembly is hauled to designated storage area.	√		
	6.5. Personal protective equipment and hand tools are used in accordance with safety and work requirements.	√		
	6.6. Excess materials and debris are properly disposed and work area is cleaned in compliance with OHS.	√		

Occupation:	Steel Binding and Fabrication		
Unit Name:	Perform steel re-bar installation works		
Unit Code:	SEIP-CON-STE-04-O		
Assessment Method:	**P**	**O**	**W**
	Performance *(including demonstration and observation)*	Oral questioning	Written examination *(including short-answer, multiple choice, and true or false questions)*

Element	**Performance Criteria**	**P**	**O**	**W**
1. Check reference point for determining elevation and centre line	**1.1.** Alignment and elevations are checked based on architectural drawings, structural drawings and specifications.			√
	1.2. Misalign dowel bars are adjusted in accordance with the line marks or building specifications.	√		
	1.3. Misalignment of initial re-bar is corrected in accordance with approved structural plan.	√		
	1.4. Tools, equipment and PPE are identified and used according to OHS guidelines and work requirements.	√		
2. Install scaffolding	**2.1.** Installation of scaffolding is carried out in accordance with OHS requirements**.**	√		
	2.2. Types of scaffolding required are confirmed and associated work tasks identified.	√		
	2.3. Projected loading on scaffolding and supporting structure is determined based on local and international building codes and project specifications.	√		
	2.4. Site/workplace access and egress routes are identified.		√	
	2.5. Scaffolding components are selected and inspected for damage; rejects are labelled and segregated.		√	
	2.6. Sole board/base plate is selected in accordance with relevant code rules and regulations, and work requirements.		√	

	2.7. Scaffolding is set up/erected in accordance with work requirements and workplace rules and regulations.	√		
	2.8. Installation of scaffolding is carried out in accordance with OHS requirements**.**	√		
	2.9. Types of scaffolding required are confirmed and associated work tasks identified.	√		
3. Install re-bars for building elements	**3.1.** Safety net is placed into position in accordance with design drawings and specifications.		√	
	3.2. Size of reinforcement bars for the various building elements are checked based on structural drawing and specifications.			√
	3.3. Reinforcement bars are located and positioned in accordance with structural drawings and specifications.	√		
	3.4. Dowels are cleaned and aligned before joining with vertical bars.	√		
	3.5. Reinforcement is located and placed using bar chair, ligatures and spacers according to structural drawing/plan and specifications.	√		
	3.6. Lateral ties/stirrups are installed and secured in place using appropriate method.	√		
	3.7. Main re-bars are joined using appropriate splicing method accordance with relevant code requirements.	√		
	3.8. Steel reinforcement for slabs are bent according to design drawing and specifications.	√		
	3.9. Slab reinforcements are positioned and fixed in place in accordance with design specifications.	√		
	3.10. Stair reinforcements are bent, positioned and fixed in place in accordance with design specifications.	√		
	3.11. Appropriate PPE are used in accordance with workplace and safety requirements.	√		
4. Check reinforcement prior to pouring concrete	**4.1.** Location and position of reinforcement and fixing ties to reinforcement are checked for accuracy	√		
	4.2. Depth of coverage, clearance, spacing and overlap of reinforcement materials are checked in accordance with structural drawings/job specifications.	√		
5. Dismantle scaffoldings	**5.1.** Scaffolding is isolated and appropriately signed and barricaded to ensure safe dismantling.		√	
	5.2. Scaffolding is dismantled using reverse procedure as for erection in accordance with safety practices.	√		
	5.3. Scaffolding components are cleaned, inventoried and returned to storage area based on workplace rules and procedures.	√		

Occupation:	Steel Binding and Fabrication				
Unit Name:	Perform basic construction levelling procedures				
Unit Code:	SEIP-CON-STE-05-O				
Assessment Method:	**P**	**O**	**W**		
	Performance *(including demonstration and observation)*	Oral questioning	Written examination *(including short-answer, multiple choice, and true or false questions)*		
Element	**Performance Criteria**			**P**	**O**	**W**
1. Plan and prepare for work	**1.1.** Work instructions, including plans, specifications, quality requirements and operational details are obtained, confirmed and applied in accordance with organizational standards and procedures.					√
	1.2. Safety requirements are followed in accordance with OHS regulations and procedures.			√		
	1.3. Signage/barricade requirement are selected and implemented according to workplace operation.					√
	1.4. Tools and equipment are selected, checked for serviceability and any defect is rectified consistent with job requirements.			√		
	1.5. Environmental protection requirements are identified and applied in accordance with environmental protection plans and regulations.				√	
2. Set up and use levelling device	**2.1.** Heights or levels to be transferred/established are identified from project plans or instructions.			√		
	2.2. Levelling devices and staffs are set-up, tested and correctly used in accordance with standard operating procedures and manufacturers' guidelines.			√		
	2.3. Levels are measured and heights transferred to required location and marked and/or recorded consistent with job requirements.			√		
	2.4. Results of levelling procedure are documented according to organizational requirements.			√		
3. Clean/maintain work area	**3.1.** Work area is cleared of any obstruction and scraps materials disposed of recycled in accordance with workplace environmental plan and regulations.			√		
	3.2. Tools and equipment are cleaned, checked, maintained and stored in accordance with manufacturers' specification and instruction, and workplace standard practices.			√		

Occupation:	Steel Binding and Fabrication
Unit Name:	Perform formworks installation

Unit Code:	SEIP-CON-STE-06-O		
Assessment Method:	**P**	**O**	**W**
	Performance *(including demonstration and observation)*	Oral questioning	Written examination *(including short-answer, multiple choice, and true or false questions)*

Element	**Performance Criteria**	**P**	**O**	**W**
1. Plan and prepare formwork installation	**1.1.** Work instructions, including plans, specifications, quality requirements and operational details are obtained, confirmed and applied according to preparation plan.			√
	1.2. Appropriate PPE is selected and used according to job requirements and construction safety guidelines.	√		√
	1.3. Signage/barricade requirements are identified and implemented according to safety and workplace regulations.	√	√	
	1.4. Tools and equipment selected to carry out tasks are checked for serviceability and any faults are rectified or reported to immediate superior prior to commencement.	√		√
	1.5. Hand and power tools are selected and used in accordance with safe operating requirements of the workplace.	√		
	1.6. Formwork components and materials are selected and prepared consistent with job requirements.	√		
	1.7. Material quantity requirements are calculated in accordance with plans and/or specifications.	√		√
	1.8. Materials appropriate to the task are identified, obtained, prepared, safely handled and located ready for use.	√	√	
2. Install formworks for building elements	**2.1.** Appropriate PPE is selected and used according to job requirements and OHS guidelines.	√		√
	2.2. Formworks components are installed in accordance with specified tolerance requirements.	√		
	2.3. Form panel components are installed/fixed in accordance with specified tolerance requirements.	√		
	2.4. Connectors, braces, locks, bolts and nuts for plastic forms are properly secured according to job requirements.	√		
	2.5. Accomplishment report is made according to company rules and regulations.			√
	2.6. Housekeeping is performed in accordance with workplace and OHS requirements.	√		
	3.1. Appropriate PPE is selected and used according to job requirements and OHS guidelines.	√		√

3. Install formworks for catch basin and manhole	**3.2.** Formwork components for catch basin and manhole are installed in accordance with specified dimensions and tolerance requirements.	√		
	3.3. Form panels components for catch basin and manhole are installed/fixed for in accordance with specified dimension and tolerance requirements.	√		
	3.4. Accomplishment report is made according to company rules and regulations	√		
	3.5. Housekeeping is performed according to OHS site safety regulations	√		
4. Repair and replace damaged formworks	**4.1.** Appropriate PPE is selected and used according to job requirements and OHS safety guidelines.	√		√
	4.2. Formworks are checked for damage according to worksite guidelines and procedures.			√
	4.3. Damaged formworks are repaired and replaced in accordance with work requirements	√		
	4.5. Accomplishment report is made according to company requirement.		√	
	4.6. Housekeeping is performed according to worksite safety regulations.	√		

PART B – THE CANDIDATE

Instructions to Candidate

To be assessed as competent, you must provide evidence which demonstrates that you can perform to the necessary standard the various elements of these units of competency that comprise of the Certificate in **Steel Binding and Fabrication**. Assessment of competency requires you to consistently demonstrate skill, knowledge and aptitude (through a variety of assessment tools such as multiple choice, short-answer questions, oral questioning, workplace observation, and practical demonstration) that enables confident completion of workplace tasks in a variety of situations.

In judging the evidence, your assessor must ensure that the evidence is:

- authentic (your own work)
- valid (directly related to the current version of the units of competency)
- reliable (consistently demonstrates of your knowledge and skill)
- current (shows your current capacity to perform the work)
- sufficient (covers the full range of elements comprised within the units of competency)

Furthermore, the assessment process must:

- provide for valid, reliable, flexible and fair assessment
- provide for judgment to be made on the basis of sufficient evidence
- offer valid, authentic and current evidence
- include workplace requirements

There are two types of assessment:

1. Knowledge Assessment - is designed to enable assessment against the various *elements* contained within the units of competency through a variety of activities such as multiple choice, short-answer questions, oral questioning. It is essentially examining your theoretical knowledge.

   This provides the assessor with substantial evidence of your knowledge and aptitude to perform the work relating to the specific unit of competency, in conjunction with other assessment tools such as workplace observation.

   You should complete the knowledge assessment as directed by the assessor and follow all instructions as and when given. If you are unable to complete the knowledge assessment, please speak to the assessor about alternative assessment solutions.

2. Skill Assessment - is designed to enable assessment against the various *performance criteria* contained within the units of competency through, for example, demonstration of skill in a simulated or actual work environment. In essence, it is an examination of your practical ability.

   This provides the assessor with substantial evidence of your ability to perform the work relating to the specific unit of competency to the standard expected by industry (the benchmark).

   You should complete the skill assessment as directed by the assessor and follow all instructions as and when given, ensuring your own health and safety.

Once you have been assessed as competent against all of the units of competency comprising of the qualification being undertaken, you will be awarded your certificate.

You assessor will discuss in more detail the requirements for assessment for each unit of competency at the appropriate time.

And please do not panic if you are not assessed as competent on any part of your qualification at your first attempt. Your assessor will discuss with you any identified skill and knowledge gaps, work through those with you and assist you as much as possible in attaining competency.

Self-Assessment Guide

Before undertaking any assessment, you should review the list of skills, knowledge and aptitudes relating to the assessment (drawn from the units of competency, its various elements and performance criteria) to determine whether you have current competency in these areas.

If you believe you can demonstrate the skills and knowledge required and can successfully complete the various assessment activities, you should then proceed to discuss your assessment with the assessor and complete Assessment Agreement.

However, should you not believe, for whatever reason, that you are not able to successfully complete the various assessment activities, then speak with the assessor. The assessor will assist you in identifying any skill and knowledge gaps, work through those with you and assist you as much as possible in attaining competency.

Please complete the self-assessment checklist below and discuss with the assessor.

Qualification:	**Steel Binding and Fabrication**
Units of competency:	**Generic units:** Perform computations using basic mathematical concepts Apply occupational health and safety (OHS) practices in the workplace Communicate in English in the workplace Operate in a self-directed team **Sector-specific units:** Translate drawings, plans and specifications Work with hand tools and power tools Carry-out measurements and calculations **Occupation-specific units:** Perform preparation works Perform fabrication works Perform assembly of prefabricated steel works Perform steel re-Bar installation works Perform basic construction levelling procedures Perform formworks installation

Instructions:

- Read each of the questions in the left-hand column of the chart
- Place a tick (√) in the appropriate box opposite each question to indicate your answer

Can I?	**YES**	**NO**
▪ Identify calculation requirements from workplace information		
▪ Select appropriate method to carry out calculation requirements		
▪ Complete calculations using appropriate tools and instruments		

▪ Read and understand OHS policies and safe operating procedures		
▪ Identify and follow safety signs and symbols		
▪ Determine emergency response, evacuation procedures and other contingency measures		
▪ Follow and practice OHS policies and procedures		
▪ Select and use personal protective equipment (PPE)		
▪ Maintain personal hygiene		
▪ Identify, assess and control hazards and risks		
▪ Report incidents arising from hazards and risks to authority		
▪ Implements corrective actions to correct unsafe conditions in the workplace		
▪ Respond to alarms and warning devices		
▪ Implement emergency response plans and procedures		
▪ Apply first aid procedures during emergency situations		
▪ Read and understand workplace documents		
▪ Interpret visual information		
▪ Prepare simple routine workplace documents using key words, phrases, simple sentences and visual aids		
▪ Write key information in the appropriate places in standard forms		
▪ Demonstrate active listening		
▪ Perform conversation in English with peers, customers and management to the required workplace standard		
▪ Identify team goals and collaborative decision-making processes		
▪ Identify roles and responsibilities of team members		
▪ Identify relationship within team and with other workers are identified		
▪ Use effective interpersonal skills to interact with team members and to contribute to activities and objectives		
▪ Use formal and informal forms of communication effectively to support team achievement		
▪ Respect and value diversity in character in team functioning		
▪ Understand and value views and opinions of other team members		
▪ Use workplace terminology correctly to assist communication		
▪ Identify and clarify with team the duties, responsibilities, authorities, objectives and task requirements		
▪ Perform tasks in accordance with organizational and team requirements, specifications and workplace procedures		
▪ Make team member's support with other members to ensure team achieves goals, awareness and requirements		
▪ Follow agreed reporting lines using standard operating procedure		

▪ Identify current and potential problems faced by team		
▪ Identify a solution to the problem		
▪ Solve problems effectively and the outcome of the implemented solution is evaluated		
• Sketch basic shapes and objects		
• Demonstrate ability to properly use manual drafting equipment		
• Create geometrical shapes utilizing manual drafting equipment		
• Demonstrate manual lettering in accordance with workplace standard.		
▪ Identify and accessed appropriate manuals		
▪ Check version and date of the manual to ensure up-to-date specifications, tools, equipment, materials and procedures		
▪ Recognize correctly relevant drawings and specifications from manuals, designs and plans		
▪ Recognize terms and abbreviations		
▪ Interpret signs and symbols		
▪ Collect and pack manuals, designs and plans		
▪ Store manuals, designs and plans to prevent damage, and ready access and updating of information when required		
▪ Select appropriate tools		
▪ Determine application of tools to job requirements		
▪ Check and verify usability of tools		
▪ Prepare hand and power tools		
▪ Identify sources of power supply for power tools		
▪ Use appropriate hand tool for the job		
▪ Apply proper and safe use/operation in the different types of hand tools		
▪ Observe safety precautions when using hand tools		
▪ Identify and mark unsafe or faulty tools for repair		
▪ Inspect and confirm safe for use power supply outlet and electrical cord in accordance with established workplace safety requirements		
▪ Apply proper sequence of operation in using power tools to produce results		
▪ Use power tools safely in accordance to manufacturer's specification		

▪ Remove dust and foreign matters from power tools and instrument in accordance to workplace standard		
▪ Check condition of tools after use		
▪ Apply appropriate lubricant after use and prior to storage		
▪ Check and calibrate measuring tools		
▪ Inspect and correct defective tools, instruments, power tools and accessories		
▪ Select appropriate measuring device for the job		
▪ Determine application of tools to job requirements		
▪ Check and verify usability of tools		
▪ Prepare measuring device		
▪ Obtain measurements using appropriate measuring device		
▪ Identify systems of measurements and converted where necessary		
▪ Confirm and record results		
▪ Execute simple calculations involving four basic mathematical operations		
▪ Use other operations to complete tasks in construction works		
▪ Select appropriate formulas for calculating quantities of materials		
▪ Perform and verify calculations		
▪ Calculate material quantities		
▪ Interpret and communicate results to authority		
▪ Check condition of instrument		
▪ Apply appropriate lubricant after use and prior to storage		
▪ Check and calibrate measuring instruments		
▪ Store instrument in accordance to workplace procedure		
▪ Receive job assignment from immediate superior based on work priority		
▪ Receive details about job assignment through appropriate means in accordance with company practices		
▪ Recognize symbols and abbreviations for steel work based on applicable construction drawings/plans.		
▪ Interpret detailed work specifications in accordance with applicable construction drawings and plans		
▪ Identify re-bar materials from design specifications		

▪ Arrange work area in accordance with work requirements and OHS guidelines and procedures		
▪ Remove unused/excess materials, debris and other obstacles in accordance with workplace and safety requirements		
▪ Check building lines determined by the surveyor to ensure alignment of structures based on approved plans/drawings		
▪ Identify and gather hand tools and equipment in accordance with workplace procedures		
▪ Check hand tools, equipment and PPEs in accordance with manufacturer's guidelines		
▪ Maintain and store hand tools and equipment in compliance with OHS requirements		
▪ Assemble bending table		
▪ Set-up and get ready bending and cutting equipment		
▪ Haul and station materials to work site in accordance with workplace requirements		
▪ Select cutting tools/equipment in accordance with steel re-bar size and type		
▪ Accurately measure and mark steel re-bars ready for cutting		
▪ Cut steel re-bars using appropriate cutting tools/equipment based on cutting list		
▪ Arrange cut steel re-bars in designated area according to workplace requirements		
▪ Gather and dispose excess steel re-bars in accordance with workplace procedures.		
▪ Apply relevant OHS guidelines at all times		
▪ Prepare appropriate bending tools and equipment in accordance with the work requirements		
▪ Install bending forms/jigs according to cutting list specifications		
▪ Manually bended main bars according to required bar shapes and quantity.		
▪ Stock pile bended main bars at the designated storage area		
▪ Apply relevant OHS guidelines at all times		
▪ Check and maintain bending machine components in accordance with manufacturer's specifications		
▪ Set bending guides/forms based on re-bar size and shape		
▪ Bend main steel bars according to required shape and quantity		

▪ Stock-pile bended main steel bars at the designated storage area		
▪ Apply relevant OHS guidelines at all times		
▪ Prepare appropriate bending tools and equipment in accordance with the work requirements		
▪ Install stirrup bending guides/forms according to cutting list specifications		
▪ Manually bend stirrups according to required stirrup shapes and quantity		
▪ Group all bended stirrups according to shapes or use		
▪ Apply relevant OHS guidelines at all times		
▪ Check and maintain bending machine components in accordance with manufacturer's specifications		
▪ Set bending guides/forms based on re-bar size and shape		
▪ Bended stirrups according to required shapes and quantity		
▪ Stock pile bended stirrups at the designated storage area		
▪ Clean and store tools and equipment in accordance with workplace requirements		
▪ Clean workplace in accordance with workplace requirements		
▪ Dispose waste materials in designated and proper place		
▪ Carry out assemble of re-bars in accordance with OHS requirements		
▪ Prepare and assemble metal/wooden supports for main/vertical bars according to work requirements		
▪ Select size of main/vertical bars and lateral ties based on structural plan, design specifications and relevant local and international construction codes		
▪ Held main/vertical bars in position by lateral ties in accordance with the column design plan		
▪ Determine spacing of main/vertical bars and lateral ties in accordance with design specifications and relevant local and international construction codes		
▪ Tie/weld lateral ties in order to hold the main /vertical bars firmly to its designed position		
▪ Haul completed column reinforcement assembly to designated according to work requirements		
▪ Properly dispose excess materials and debris and clean work area in compliance with OHS guidelines		
▪ Carry out assembly of re-bars for beams in accordance with OHS guidelines		

▪ Prepare and assemble metal/wooden supports for main bars according to work requirements		
▪ Select size of main bars, extra/cut bars and closed stirrups based on structural plan, design specifications and relevant local and international construction codes		
▪ Held main bars and extra/cut bars in position by closed stirrups in accordance with the beam design plan		
▪ Properly space and tie/weld closed stirrups in order to hold the main bars firmly to its designed position		
▪ Haul completed beam reinforcement assembly to designated storage area		
▪ Use personal protective equipment and hand tools in accordance with safety and work requirements		
▪ Properly dispose excess materials and debris and clean work area in compliance with OHS guidelines		
▪ Carry out assembly of re-bars for joist in accordance with OHS requirements		
▪ Prepare and assemble metal/wooden supports for main bars according to work requirements		
▪ Select size of main bars, extra/cut bars and closed stirrups based on structural plan, design specifications and relevant local and international construction codes		
▪ Held main bars and extra/cut bars in position by closed stirrups in accordance with the joists design plan		
▪ Properly space and tie/weld closed stirrups in order to hold the main bars firmly to its designed position		
▪ Haul completed joist reinforcement assembly to designated storage area		
▪ Carry out assembly of re-bars for girders in accordance with OHS requirements		
▪ Held main bars and extra/cut bars in position by closed stirrups in accordance with the girder design plan		
▪ Haul completed girder reinforcement assembly to designated storage area		
▪ Carry out assembly of re-bars for slabs in accordance with OHS requirements		
▪ Prepare metal bed for slab fabrication in accordance with work requirements		
▪ Select size of bars based on structural plan, design specifications and relevant local and international construction codes		
▪ Properly space and tie/weld slab re-bars accordance with design specifications and relevant local and international construction codes		
▪ Haul completed slab reinforcement assembly to designated storage area		
▪ Carry out assembly of re-bars for board piles/pile caps is in accordance with OHS requirements		

▪ Select sizes of main bars based on structural plan, design specifications and relevant local and international construction codes		
▪ Properly space and tie/weld board pile re-bars in accordance with design specifications and relevant local and international construction codes		
▪ Haul completed board pile reinforcement assembly to designated storage area		
▪ Check alignment and elevations based on architectural drawings, structural drawings and specifications		
▪ Adjust misalign dowel bars in accordance with the line marks or building specifications		
▪ Correct misalignment of initial re-bar in accordance with approved structural plan		
▪ Identify and use tools, equipment and PPE according to OHS guidelines and work requirements		
▪ Carry out installation of scaffolding in accordance with OHS requirements		
▪ Confirm types of scaffolding required and identify work tasks		
▪ Determine projected loading on scaffolding and supporting structure based on local and international building codes and project specifications		
▪ Identify site/workplace access and egress routes		
▪ Select and inspect scaffolding components for damage; label and segregate rejects		
▪ Select sole board/base plate in accordance with relevant code rules and regulations, and work requirements		
▪ Set up/erect scaffolding in accordance with work requirements and workplace rules and regulations		
▪ Install static/safety lines where specified in accordance with safety rules and regulations		
▪ Assemble and install lifting device where specified		
▪ Place safety net into position in accordance with design drawings and specifications		
▪ Check sizes of reinforcement bars for the various building elements based on structural drawing and specifications		
▪ Locate and position reinforcement bars in accordance with structural drawings and specifications		
▪ Clean and align dowels before joining with vertical bars		
▪ Locate and place reinforcement using bar chair, ligatures and spacers according to structural drawing/plan and specifications		
▪ Install and secure lateral ties/stirrups in place using appropriate method		

▪ Join main re-bars using appropriate splicing method in accordance with relevant code requirements		
▪ Bend steel reinforcement for slabs according to design drawing and specifications		
▪ Position and fix slab reinforcements in place in accordance with design specifications		
▪ Stair reinforcements are bent, positioned and fixed in place in accordance with design specifications.		
▪ Use appropriate PPE in accordance with workplace and safety requirements		
▪ Check location and position of reinforcement and fixing ties to reinforcement for accuracy		
▪ Check depth of coverage, clearance, spacing and overlap of reinforcement materials in accordance with structural drawings/job specifications		
▪ Isolate scaffolding, sign and barricade appropriately to ensure safe dismantling		
▪ Dismantle scaffolding using reverse procedure as for erection in accordance with safety practices		
▪ Clean, inventory and return scaffolding components to storage area based on workplace rules and procedures		
▪ Obtain, confirm and apply work instructions, including plans, specifications, quality requirements and operational details in accordance with organizational standards and procedures		
▪ Follow safety requirements in accordance with OHS regulations and procedures		
▪ Select and implement signage/barricade requirement according to workplace operation		
▪ Select tools and equipment and check for serviceability and rectify any defect consistent with job requirements		
▪ Identify and apply environmental protection requirements in accordance with environmental protection plans and regulations		
▪ Identify heights or levels to be transfer/establish from project plans or instructions		
▪ Set-up, test and correctly use levelling devices and staffs in accordance with standard operating procedures and manufacturers' guidelines		
▪ Measure levels and transfer heights to required location and mark and/or record consistent with job requirements		
▪ Document results of levelling procedure according to organizational requirements		
▪ Clear work area any obstruction and dispose of or recycle scrap materials in accordance with workplace environmental plan and regulations		

▪ Clean, check, maintain and store tools and equipment in accordance with manufacturers' specification and instruction, and workplace standard practices		
▪ Obtain, confirm and apply work instructions, including plans, specifications, quality requirements and operational details according to preparation plan		
▪ Select and use appropriate PPE according to job requirements and construction safety guidelines		
▪ Identify signage/barricade requirements are identified and implemented according to safety and workplace regulations		
▪ Select tools and equipment to carry out tasks, check serviceability and rectify or report any faults to immediate superior prior to commencement		
▪ Select and use hand and power tools in accordance with safe operating requirements of the workplace		
▪ Select and prepare formwork components and materials consistent with job requirements		
▪ Calculate material quantity requirements in accordance with plans and/or specifications		
▪ Identify, obtain, prepare, safely handle and locate materials appropriate to the task		
▪ Select and use appropriate PPE according to job requirements and OHS guidelines		
▪ Install formwork components in accordance with specified tolerance requirements		
▪ Install/fix form panel components in accordance with specified tolerance requirements		
▪ Properly secure connectors, braces, locks, bolts and nuts for plastic forms according to job requirements		
▪ Make accomplishment report according to company rules and regulations		
▪ Perform housekeeping in accordance with workplace and OHS requirements		
▪ Install formwork components for catch basin and manhole in accordance with specified dimensions and tolerance requirements		
▪ Install/fix form panels components for catch basin and manhole in accordance with specified dimension and tolerance requirements		
▪ Make accomplishment report according to company rules and regulations		
▪ Perform housekeeping according to OHS site safety regulations		
▪ Select and use appropriate PPE according to job requirements and OHS safety guidelines		

▪ Check formworks for damage according to worksite guidelines and procedures		
▪ Repair and replace damaged formworks in accordance with work requirements		
I agree to undertake assessment in the knowledge that information gathered will only be used for professional development purposes and can only be accessed by concerned assessment personnel and my manager/supervisor.		
Candidate's signature:		**Date:**

PART C – THE ASSESSMENT

Assessment Agreement – Steel Binding and Fabrication

The purpose of assessment is to confirm that you can perform to the standards expected in the workplace of an occupation, as expressed in the competency standards (after completion of self-assessment and in agreement with assessor).

To help achieve this, an assessment agreement is required to navigate both you and the assessor through the assessment process.

The assessment agreement is designed to provide a clear understanding of what and how you will be assessed and to nominate the tools that may be used to collect the assessment evidence.

You, the assessor and/or workplace supervisor should agree on the assessment requirements, dates and deadlines.

Therefore, to attain the Certificate of **Steel Binding and Fabrication**, you must demonstrate competence in the following units, as established in the assessment agreement:

CODE	UNIT OF COMPETENCY
Generic Competencies	
SEIP-CON-STE-01-G	Perform computations using basic mathematical concepts
SEIP-CON-STE-02-G	Apply occupational health and safety (OHS) practices in the workplace
SEIP-CON-STE-03-G	Communicate in English in the workplace
SEIP-CON-STE0-4-G	Operate in a self-directed team
Sector-specific Competencies	
SEIP-CON-STE-01-S	Translate drawings, plans and specifications
SEIP-CON-STE-02-S	Work with hand tools and power tools
SEIP-CON-STE-03-S	Carry-out measurements and calculations
Occupation-specific Competencies	
SEIP-CON-STE-01-O	Perform preparation of works
SEIP-CON-STE-02-O	Perform fabrication works
SEIP-CON-STE-03-O	Perform assembly of prefabricated steel works
SEIP-CON-STE-04-O	Perform steel re-bar installation works
SEIP-CON-STE-05-O	Perform basic construction levelling procedures
SEIP-CON-STE-06-O	Perform formworks installation

After successful completion of learning and assessment, you shall be awarded with a certificate.

Assessment Agreement	
Occupation:	Steel Binding and Fabrication
Assessment Centre:	
Candidate Name:	
Assessor Name:	
Unit of Competency	
Generic Competencies	
SEIP-CON-STE-01-G	Perform computations using basic mathematical concepts
SEIP-CON-STE-02-G	Apply occupational health and safety (OHS) practices in the workplace
SEIP-CON-STE-03-G	Communicate in English in the workplace
SEIP-CON-STE-04-G	Operate in a self-directed team
Sector-specific Competencies	
SEIP-CON-STE-01-S	Translate drawings, plans and specifications
SEIP-CON-STE-02-S	Work with hand tools and power tools
SEIP-CON-STE-03-S	Carry-out measurements and calculations
Occupation-specific Competencies	
SEIP-CON-STE-01-O	Perform preparation of works
SEIP-CON-STE-02-O	Perform fabrication works
SEIP-CON-STE-03-O	Perform assembly of prefabricated steel works
SEIP-CON-STE-04-O	Perform steel re-bar installation works
SEIP-CON-STE-05-O	Perform basic construction levelling procedures
SEIP-CON-STE-06-O	Perform formworks installation

Resources Required for Assessment

Candidates must have access to the following:

- copies of activities, questions, projects nominated by the assessor
- relevant organisational policies, protocols and procedural documents (if required)
- devices or tools to record answers
- appropriate actual or simulated workplace
- all necessary tools and equipment used in performance of the work-based task
- any other resources normally used in the workplace

Assessment Instructions

Candidates should respond to the formative and summative assessments either verbally or in writing as agreed with the assessor. Written responses can be recorded in the spaces provided (if more space is required attach additional pages) or submitted in a word-processed document.

If candidates answer verbally, the assessor should record their answers in detail.

Candidates should also undertake observable tasks that provide evidence of performance. The assessor must provide instruction to candidates on what is expected during observation, and arrange a suitable time and location for demonstration of these skills.

Candidates must fully understand what they are required to do to complete these assessment tasks successfully, and then sign the declaration.

Performance Standards
To receive a **satisfactory** result for the assessments, candidates must complete all activities, questions, projects, and tasks nominated by the assessor, to the required standard. Completion of all tasks for a unit of competency, to a satisfactory level, will contribute to an assessment of competence for that specific individual unit (or units if holistic assessment approach is taken). Successful completion of all units of competency that comprise of the qualification **Steel Binding and Fabrication**, will result in the candidate being issued with the relevant, nationally recognised certificate. Assessors must clearly explain the required performance standards.
Declaration
I declare that: ▪ the assessment requirements have been clearly explained to me ▪ all the work completed towards assessment will be my own ▪ cheating and plagiarism are unacceptable

Candidate Signature:		**Date:**	
Assessor Signature:		**Date:**	

PART D – ASSESSMENT TOOLS

Specific Instructions to Assessor

Please read carefully and prepare as necessary:

1. The assessor shall (practical demonstration assessment activities):
    - provide the candidate with the necessary tools, equipment, machinery and materials for completion of one (1) set of the following practical demonstration activities:
        - Set A:
            - fabrication, assembly and installation of re-bars for column size of 375mm x 250mm (15” x 10”)
            - installation of formworks for column size of 375mm x 250mm (15” x 10”)
        - Set B:
            - fabrication, assembly and installation of re-bars for column size of 25cm x 25cm (10” x 10”) on a column base 75cm x 75cm (30” x 30”)
            - fabrication, assembly and installation of re-bars for beam size of 25cm x 40cm (10” x 16”) and total length is 350cm
        - Set C:
            - fabrication, assembly and installation of re-bars for column size of 300mm x 300mm (12” x 12”) on a column base 1500mm x 1500mm (5” x 5”)
            - fabrication, assembly and installation of re-bars for beam size of 300mm x 400mm (12” x 16”) and total length is 2500mm
    - provide the candidate with the copy of the specific instruction to candidate
    - allow each practical demonstration to be performed within one (1) hour including preparation of the materials
    - ensure that the candidate **FULLY** understands the instructions before proceeding to the performance of the assessment activity
    - allow fifteen (15) minutes for the candidate to familiarise themselves with the resources to be used during the practical demonstrations
    - ensure that the candidate is wearing appropriate personal protective equipment (PPE) before allowing them to proceed with the assessment activity
2. Assessment shall be based on the performance criteria in each of the units of competency. The evidence gathering method shall be comprised of:

    (a) Written Test (1 hour) – **knowledge evidence**

    (b) Practical Demonstration (4 hours) – **performance evidence**

    The practical demonstration activities will be divided into two (2) tasks (contained in one set):

    (i) Practical Demonstration 1 (2 hours)

    (ii) Practical Demonstration 2 (2 hours)

3. Final assessment is your responsibility as the accredit/certified assessor.

4. At the conclusion of each assessment activity, you will provide feedback to the candidate of the assessment result. The feedback will indicate whether the candidate is:

❑ **COMPETENT**

❑ **NOT YET COMPETENT**

5. The list of tools, equipment, machinery and materials to be provided for completion of the practical demonstration assessment activities can be found at:

Specific Instructions to Candidate

You should respond to the assessment either in writing or verbally as agreed with the assessor. Written responses can be recorded in the spaces provided; if more space is required attach additional pages or submit a word-processed document.

If you answer verbally, the assessor should record your answers in detail. Please check your recorded answers carefully and thoroughly to ensure that they are accurate.

You may also be undertaking observable activities (i.e. practical demonstration) that provide evidence of performance. The assessor must provide you with clear instructions on what is expected during this type of assessment, and arrange a suitable time and location for demonstration of these skills.

To receive a satisfactory result for the assessments, you must complete all of the assessment activities; including questions, projects and tasks nominated by the assessor, to the required standard.

This assessment is based upon the units of competency in Steel Binding and Fabrication. Using the performance criteria as a benchmark, evidence will be gathered through:

1. Written Test (1 hour) – a variety of multiple-choice, true of false and short answer theory questions to support your competence with regard to the required knowledge (**knowledge evidence**).

2. Practical Demonstration (4 hours) – observable tasks outlined in the elements and performance criteria of the units of competency, completed to support a judgement of satisfactory performance to the required standard (**performance evidence**).

   There will be one (1) set of practical demonstration activities to complete. The assessor will direct you as to which 'set' you will be required to complete out of the following:

   - Set A:
     - fabrication, assembly and installation of re-bars for column size of 375mm x 250mm (15" x 10") - (1 hour)
     - installation of formworks for column size of 375mm x 250mm (15" x 10") - (1 hour)
   - Set B:
     - fabrication, assembly and installation of re-bars for column size of 25cm x 25cm (10" x 10") on a column base 75cm x 75cm (30" x 30") - (1 hour)
     - fabrication, assembly and installation of re-bars for beam size of 25cm x 40cm (10" x 16") and total length is 350cm - (1 hour)
   - Set C:
     - fabrication, assembly and installation of re-bars for column size of 300mm x 300mm (12" x 12") on a column base 1500mm x 1500mm (5" x 5") - (1 hour)
     - fabrication, assembly and installation of re-bars for beam size of 300mm x 400mm (12" x 16") and total length is 2500mm - (1 hour)

3. The assessor will provide all necessary tools, equipment, machinery and materials required to complete each assessment activity.

4. These assessments cover all units of competency for Steel Binding and Fabrication.

5. The assessor will provide you with feedback of your performance after completion of each assessment activity. This feedback shall indicate whether you are:

   ❑ **COMPETENT**

   ❑ **NOT YET COMPETENT**

6. Complete of all assessment activities, to a satisfactory level, will contribute to a final assessment of competence.

Written Test

WRITTEN TEST - INSTRUCTIONS	
Candidate Name:	
Assessor Name:	
Qualification:	Certificate in Steel Binding and Fabrication
Unit of Competency	
Generic Competencies	
SEIP-CON-STE-01-G	Perform computations using basic mathematical concepts
SEIP-CON-STE-02-G	Apply occupational health and safety (OHS) practices in the workplace
SEIP-CON-STE-03-G	Communicate in English in the workplace
SEIP-CON-STE-04-G	Operate in a self-directed team
Sector-specific Competencies	
SEIP-CON-STE-01-S	Translate drawings, plans and specifications
SEIP-CON-STE-02-S	Work with hand tools and power tools
SEIP-CON-STE-03-S	Carry-out measurements and calculations
Occupation-specific Competencies	
SEIP-CON-STE-01-O	Perform preparation works
SEIP-CON-STE-02-O	Perform fabrication works
SEIP-CON-STE-03-O	Perform assembly of prefabricated steel works
SEIP-CON-STE-04-O	Perform steel re-bar installation works
SEIP-CON-STE-05-O	Perform basic construction levelling procedures
SEIP-CON-STE-06-O	Perform formworks installation
Assessment Centre:	
Date of Assessment:	
Time of Assessment:	
Instructions:	
Read and understand the directions carefully: ▪ this written examination is based on the performance criteria from all the units of competency in Steel Binding and Fabrication ▪ this assessment activity will be used to measure your underpinning knowledge ▪ write your answers on the paper provided ▪ answer all the questions as best as possible ▪ you have 1 (one) hour to complete this test	

WRITTEN TEST		
Multiple Choice		
This is a **multiple-choice** of test. Choose the appropriate answer and circle the letter that corresponds with your answer.		
1.	What percentage of 250 is 50?	a. 10% b. 20% c. 25% d. 50%
2.	The concrete clear cover for reinforcement of column is:	a. 3/4” b. 1” c. 1.5” d. 2”
3.	What are the advantages of a self-directed team?	a. Improved quality, productivity and service b. Greater flexibility c. Prohibition signs d. Faster response to technological change e. All of the above
4.	Which type of hacksaw blade consisting of 14 TPI is suitable for cutting?	a. Machine steel b. Cast iron c. Bronze d. Conduit
5.	Which line is used to show the visible shape of the object?	a. Chain line b. Object line c. Section line d. Extension line
6.	For stirrups of a beam which rebar is generally used?	a. 6mm Ø b. 8mm Ø c. 10mm Ø d. 16mm Ø
7.	For column minimum diameter of main bar/vertical bar should not be less than:	a. 10mm Ø b. 12mm Ø c. 16mm Ø d. 25mm Ø

8.	The two-way RCC slab transfer loads on what supporting edges:	a. One b. Two c. Three d. Four
9.	The following are examples of “Struck-by” hazards in construction sector except for:	a. Heavy equipment and vehicles, like trucks and cranes b. Falling or flying objects, like tools and flying particles c. The microorganism found in the hands of the workers d. Concrete or masonry walls that are being constructed
10.	Ways to build relationships within a team include?	a. Discuss team member work styles b. Define “team personality” c. Discuss individual goals, hopes, concerns d. All of the above
True or False Quiz		
Tick (√) the box corresponding to the correct answer.		
11.	Safety vest is used to increase the visibility of a construction worker.	True ☐ False ☐
12.	Excessive noise can cause permanent hearing loss?	True ☐ False ☐
13.	Formwork is a permanent structure built for concrete works	True ☐ False ☐
Fill in the Missing Blanks		
Write the word or group of words needed to complete the following sentences.		
14.	_____ is used in construction sites to protect the head from injury due to falling objects.	
15.	The simple hand tool which is easy to carry and easy for operation, used to bend mild steel rebars of different sizes is known as _____.	
Short Answer		
Write a short answer in the space provided (not to exceed more than approximately twenty-five (25) words).		
16.	What is meeting minute?	

17.	What are the advantages of using a rebar bender machine?	
18.	State the importance of safety net in construction?	
19.	What are the levelling devices used in construction?	
20.	How can you check the squareness of a room?	
Feedback to candidate:		
Assessment decision for this assessment activity: ☐ **Competent** ☐ **Not Yet Competent**		

Candidate's Signature:		**Date:**	
Assessor' Signature:		**Date:**	

Written Test - Answers

Answers are highlighted in **bold** and *italics*.

Multiple Choice		
1.	What percentage of 250 is 50?	a. 10% ***b. 20%*** c. 25% d. 50%
2.	The concrete clear cover for reinforcement of column is:	a. 3/4” b. 1” ***c. 1.5”*** d. 2”
3.	What are the advantages of a self-directed team?	a. Improved quality, productivity and service b. Greater flexibility c. Prohibition signs d. Faster response to technological change ***e. All of the above***
4.	Which type of hacksaw blade consisting of 14 TPI it is suitable for cutting?	***a. Machine steel*** b. Cast iron c. Bronze d. Conduit
5.	Which line is used to show the visible shape of the object?	a. Chain line ***b. Object line*** c. Section line d. Extension line
6.	For stirrups of a beam which rebar is generally used?	a. 6mm Ø b. 8mm Ø ***c. 10mm Ø*** d. 16mm Ø
7.	For column minimum diameter of main bar/vertical bar should not be less than:	a. 10mm Ø b. 12mm Ø ***c. 16mm Ø*** d. 25mm Ø

8.	The two-way RCC slab transfer loads on what supporting edges?	a. One b. Two c. Three ***d. Four***
9.	The following are examples of "Struck-by" hazards in construction sector except for:	a. Heavy equipment and vehicles, like trucks and cranes b. Falling or flying objects, like tools and flying particles c. ***The microorganism found in the hands of the workers*** d. Concrete or masonry walls that are being constructed
10.	Ways to build relationships within a team include?	a. Discuss team member work styles b. Define "team personality" c. Discuss individual goals, hopes, concerns ***d. All of the above***
True of False Quiz		
11.	Safety vest is used to increase the visibility of a construction worker.	***True*** √ ***False*** ☐
12.	Excessive noise can cause permanent hearing loss?	***True*** √ ***False*** ☐
13.	Formwork is a permanent structure built for concrete works	True ☐ ***False*** √
Fill in the Missing Blanks		
14.	<u>Safety helmet</u> is used in construction sites to protect the head from injury due to falling objects.	
15.	The simple hand tool which is easy to carry and easy for operation used to bend mild steel rebars of different sizes is known as <u>steel rebar bender.</u>	
Short Answer		
16.	What is meeting minute?	***Meeting minutes are the written or recorded documentation that is used to inform attendees and non-attendees about what was discussed and what happened during a meeting.***
17.	What are the advantages of using a rebar bender machine?	***The use of a rebar bender is to bend reinforcement steel bars. It can save time and physical effort during the construction process. It is also portable.***

18.	State the importance of safety net in construction?	***In construction the safety net is very important, it is used to protect people from injury and for arresting falling or flying objects for the safety of people beyond or below the net.***
19.	What are the levelling devices used in construction?	***The levelling devices used in construction are: Water level, Spirit level, Digital level, Optical level, Automatic level, Laser level.***
20.	How can you check the squareness of a room?	***To check the squareness of a room without measuring the angles, diagonal measurements can be used.***

Set A: Practical Demonstration 1

PRACTICAL DEMONSTRATION 1	
Candidate Name:	
Assessor Name:	
Qualification:	Certificate in Steel Binding and Fabrication
Task:	Fabricate, assemble and install re-bars for column size of 375mm x 250mm (15" x 10") and height of 2.5m
Assessment Centre:	
Date of Assessment:	
Time of Assessment:	

Instructions:

Read and understand the directions carefully:

- this practical demonstration is based on the performance criteria from all or some of the units of competency in Steel Binding and Fabrication
- this assessment activity will be used to measure your underpinning skills
- you will have fifteen (15) minutes to familiarise yourself with the resources to be used
- you have two (2) hours to complete this demonstration

Procedure:

- observe and wear personal protective equipment (PPE) as required for the task to be performed
- read the specification information provided
- collect all materials needed to complete the task
- perform the task within the given time
- observe and follow all health and safety (OHS) requirements at all times

Job Specification Information:

1. Collect all necessary tools and equipment to fabricate, assemble and install re-bars for column.
2. Collect steel re-bars for column.
3. Straight the re-bars and remove rust if any, following the right techniques.
4. Determine the size of the column and lateral ties.
5. Calculate the length and mark the re-bars with proper tools.
6. Calculate the quantity of steel re-bars for lateral ties to be required.
7. Cut and bend the main/vertical bars for column and form lateral ties.
8. Assemble the main bars over elevated support and enclose the lateral ties as required.
9. Report to Assessor for final evaluation.
10. Clean the tools, equipment and work area.
11. Dispose waste materials and excess materials.

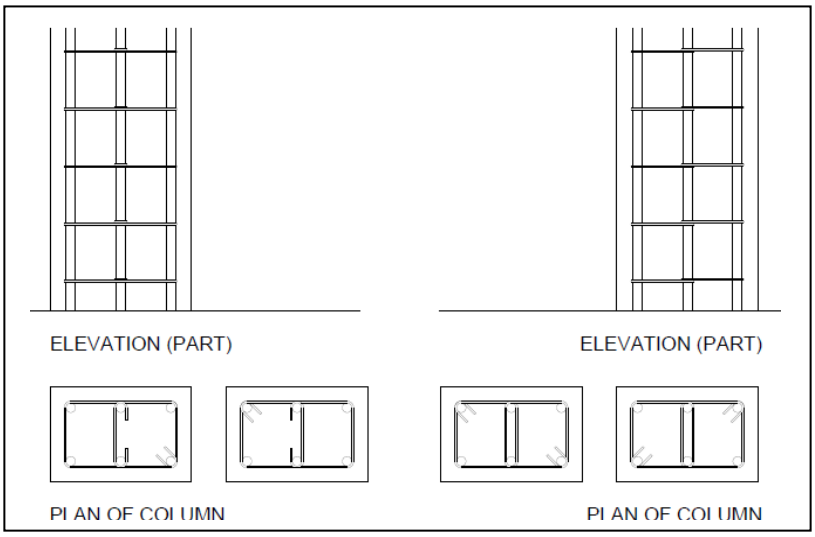
Drawing, Plan, Diagram or Sketch:

The illustration below is the blueprint of the project to be performed. During fabrication, assembly and installation process for column, you are to ensure:

- Squareness
- Spacing of bars
- Shape and hooking angle
- Arrangement of tie bars
- Lapping/splicing
- Tightness

- Measurements

Column size will be 375mm x 250mm
Height of the column will be 2500mm
Main/vertical rebar will be 6-16mmØ
Lateral ties will be 10mmØ @ 200mm c/c
Clear cover of reinforcement will be 37.5mm



Resources Required:	
Tools:	Measuring tape Steel rule Sledge hammer Cold chisel Hacksaw Steel wire twisting tool Steel bar bender Craw bar Re-bar bender stand/table
Equipment:	Steel bar cutting machine Power hacksaw Angle grinder PPR welding set
Machinery:	N/A
Materials:	Steel rebar GI/tie wire Sand paper Steel brush
PPE:	Apron Mask Safety helmet Gloves (long) Safety shoes

Set A: Practical Demonstration 1 – Observation Checklist

PRACTICAL DEMONSTRATION 1 – OBSERVATION CHECKLIST	
Candidate Name:	
Assessor Name:	
Qualification:	Certificate in Steel Binding and Fabrication
Task:	Fabricate, assemble and install re-bars for column size of 375mm x 250mm (15" x 10") and height of 2.5m
Assessment Centre:	
Date of Assessment:	
Instructions:	The tasks listed on the observation checklist of the practical demonstration will provide performance evidence of the candidate. Performance can be observed in an actual workplace or in a simulated working environment. If performance of particular tasks cannot be observed, you may ask the candidate to explain a procedure or enter into a discussion on the subject. The assessment activity (practical demonstration) should: ▪ fit industry requirements in which the assessment will be conducted ▪ adhere, where possible, to reasonable adjustment practices ▪ ensure that suitable performance benchmarks are applied and explained to the candidate

OBSERVATION RECORD		
Performance Criteria	Place a ✓ to show if evidence has been demonstrated competently	
	Yes	**No**
Identified safety signs and symbols	☐	☐
Selected and used personal protective equipment	☐	☐
Maintained personal hygiene	☐	☐
Applied first aid procedure during emergency situations	☐	☐
Selected appropriate tools	☐	☐
Determined application of tools to job requirements	☐	☐
Prepared hand and power tools	☐	☐
Applied proper and safe use/operation is applied in the different types of hand tools	☐	☐
Used power tools safely in accordance to manufacturer's operating specification	☐	☐
Removed dust and foreign matters from power tools in accordance to workplace standard	☐	☐
Checked condition of tools after use	☐	☐

Applied appropriate lubricant after use and prior to storage	☐	☐
Checked and calibrated measuring tools	☐	☐
Inspected and corrected or replaced defective tools, instruments, power tools and accessories	☐	☐
Selected appropriate measuring device for the job	☐	☐
Determined applications of tools to job requirements	☐	☐
Prepared measuring device	☐	☐
Calculated material quantities	☐	☐
Interpreted and communicated results to authority	☐	☐
Removed dust and foreign matters from measuring instrument	☐	☐
Checked condition of instrument	☐	☐
Applied appropriate lubricant after use and prior to storage	☐	☐
Stored instruments according to workplace procedure	☐	☐
Interpreted detailed work specifications in accordance with applicable construction drawings and plans	☐	☐
Identified re-bar materials from design specifications	☐	☐
Assembled bending table	☐	☐
Set-up and get ready bending and cutting equipment	☐	☐
Hauled materials to work site and stationed in accordance with workplace requirements	☐	☐
Accurately measured and marked steel re-bars	☐	☐
Cut steel re-bars using appropriate cutting tools/equipment based on cutting list	☐	☐
Arranged cut steel re-bars in designated area according to workplace requirements	☐	☐
Applied relevant OHS guidelines at all times	☐	☐
Prepared appropriate bending tools and equipment in accordance with the work requirements	☐	☐
Installed bending forms/jigs according to cutting list specifications	☐	☐
Manually bended main bars according to required bar shapes and quantity	☐	☐
Set bending guides/forms based on re-bar size and shape	☐	☐
Bended main steel bars according to required shape and quantity	☐	☐
Accurately measured and marked steel re-bars ready for cutting	☐	☐
Cut steel re-bars using appropriate cutting tools/equipment based on cutting list	☐	☐
Arranged cut steel re-bars in designated area according to workplace requirements	☐	☐
Gather and disposed excess steel re-bars in accordance with workplace procedures	☐	☐

Installed bending forms/jigs according to cutting list specifications	☐	☐
Manually bended main bars according to required bar shapes and quantity	☐	☐
Set bending guides/forms based on re-bar size and shape	☐	☐
Bended main steel bars according to required shape and quantity	☐	☐
Installed stirrup bending guides/forms according to cutting list specifications	☐	☐
Manually bended stirrups according to required stirrup shapes and quantity	☐	☐
Grouped all bended stirrups according to shapes or use	☐	☐
Checked and maintained bending machine components in accordance with manufacturer's specifications	☐	☐
Set bending guides/forms based on re-bar size and shape	☐	☐
Bended stirrup according to required shapes and quantity	☐	☐
Carry out assembly of re-bars for column in accordance with OHS requirements	☐	☐
Prepared and assembled metal/wooden supports for main/vertical bars according to work requirements	☐	☐
Held main/vertical bars in position by lateral ties in accordance with the column design plan	☐	☐
Determined spacing of main/vertical bars and lateral ties in accordance with the column design plan	☐	☐
Ties/welded lateral ties in order to hold the main/vertical bars firmly to its designated position	☐	☐
Identified height or levels to be transferred/established from project plans or instructions	☐	☐
Set up, tested and correctly used levelling devices and staffs in accordance with standard operating procedures and manufacturer's guidelines	☐	☐
Measured levels and transferred heights to required location and marked and/or recorded consistent with job requirements	☐	☐
Documented results of levelling procedure according to organizational requirements	☐	☐
Cleared work area of any obstruction and disposed or recycled scrap materials in accordance with workplace environmental plan and regulations	☐	☐
Cleaned, checked maintained and stored tools and equipment in accordance with manufacturer's specifications and instructions and workplace standard practices	☐	☐
Feedback to candidate:		

Assessment decision for this assessment activity: ☐ **Competent** ☐ **Not Yet Competent**			
Candidate's Signature:		**Date:**	
Assessor' Signature:		**Date:**	

Set A: Practical Demonstration 2

PRACTICAL DEMONSTRATION 2	
Candidate Name:	
Assessor Name:	
Qualification:	Certificate in Steel Binding and Fabrication
Task:	Install formworks for column size of 375mm x 250mm (15" x 10")
Assessment Centre:	
Date of Assessment:	
Time of Assessment:	

Instructions:

Read and understand the directions carefully:

- this practical demonstration is based on the performance criteria from all or some of the units of competency in Steel Binding and Fabrication
- this assessment activity will be used to measure your underpinning skills
- you will have fifteen (15) minutes to familiarise yourself with the resources to be used
- you have two (2) hours to complete this demonstration

Procedure:

- observe and wear personal protective equipment (PPE) as required for the task to be performed
- read the specification information provided
- collect all materials needed to complete the task
- perform the task within the given time
- observe and follow all health and safety (OHS) requirements at all times

Job Specification Information:

1. Collect all necessary tools and equipment to perform formwork installation for column.
2. Identify and select usable tools and equipment.
3. Collect formworks components and materials for column size of 15" x 10" (use the output from Practical Demonstration 1).
4. Determine the size of the column.
5. Calculate the quantity of formworks components and materials to be required.
6. Check, select and cut the formworks components in accordance with work requirements.
7. Assemble the components in accordance with work requirements.
8. Join two sides of column panels and erect for one corner.
9. Join the rest two sides of column panels and erect for another corner.
10. Tie/fix the column formwork.
11. Check the alignment and accuracy to size of the column.
12. Report to Assessor for final evaluation.
13. Clean the tools, equipment and work area.
14. Dispose waste materials and excess materials.

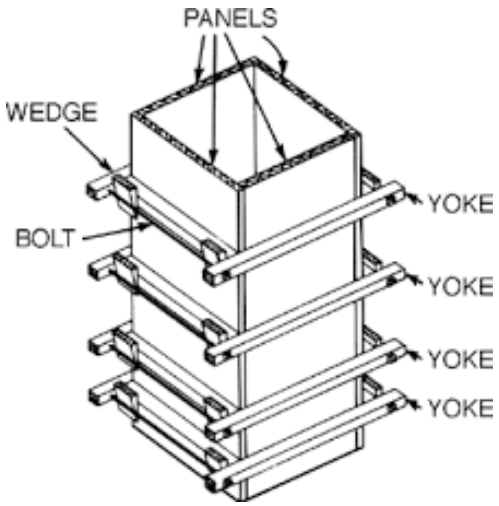
Drawing, Plan, Diagram or Sketch:

The illustration below is the blueprint of the project to be performed. During fabrication, assembly and installation process for column, you are to ensure:

- Squareness
- Spacing of bars
- Shape and hooking angle

- Arrangement of tie bars
- Lapping/splicing
- Tightness
- Measurements

Column size will be 375mm x 250mm
Height of the column will be 2500mm



Formwork for Column

Resources Required:	
Tools:	Measuring tape Steel rule Ball peen hammer Plumb bob Hand saw Hacksaw String Combination pliers Pencil Spirit level Crowbar Nail pincer Column clamp Slide wrench
Equipment:	Electric wood saw Electric drill machine
Machinery:	N/A
Materials:	Formworks boards Squared timber Round timbers Round timbers

	Various wooden wedges Nails of different sizes Steel/GI/Tie wire
PPE:	Apron Mask Safety helmet Gloves (long) Safety shoes

Set A: Practical Demonstration 2 – Observation Checklist

PRACTICAL DEMONSTRATION 2 – OBSERVATION CHECKLIST	
Candidate Name:	
Assessor Name:	
Qualification:	Certificate in Steel Binding and Fabrication
Task:	Install formworks for column size of 375mm x 250mm (15" x 10")
Assessment Centre:	
Date of Assessment:	
Instructions:	The tasks listed on the observation checklist of the practical demonstration will provide performance evidence of the candidate. Performance can be observed in an actual workplace or in a simulated working environment. If performance of particular tasks cannot be observed, you may ask the candidate to explain a procedure or enter into a discussion on the subject. The assessment activity (practical demonstration) should: ▪ fit industry requirements in which the assessment will be conducted ▪ adhere, where possible, to reasonable adjustment practices ▪ ensure that suitable performance benchmarks are applied and explained to the candidate

OBSERVATION RECORD		
Performance Criteria	Place a ✓ to show if evidence has been demonstrated competently	
	Yes	**No**
Identified safety signs and symbols	☐	☐
Selected and used personal protective equipment	☐	☐
Maintained personal hygiene	☐	☐
Applied first aid procedure during emergency situations	☐	☐
Selected appropriate tools	☐	☐
Determined application of tools to job requirements	☐	☐
Prepared hand and power tools	☐	☐
Applied proper and safe use/operation is applied in the different types of hand tools	☐	☐
Used power tools safely in accordance to manufacturer's operating specification	☐	☐
Removed dust and foreign matters from power tools in accordance to workplace standard	☐	☐
Checked condition of tools after use	☐	☐

Applied appropriate lubricant after use and prior to storage	☐	☐
Checked and calibrated measuring tools	☐	☐
Inspected and corrected or replaced defective tools, instruments, power tools and accessories	☐	☐
Selected appropriate measuring device for the job	☐	☐
Determined applications of tools to job requirements	☐	☐
Prepared measuring device	☐	☐
Calculated material quantities	☐	☐
Interpreted and communicated results to authority	☐	☐
Removed dust and foreign matters from measuring instrument	☐	☐
Checked condition of instrument	☐	☐
Applied appropriate lubricant after use and prior to storage	☐	☐
Stored instruments according to workplace procedure	☐	☐
Adjusted misalign dowel bars in accordance with the line marks or building specifications	☐	☐
Corrected misalignment of initial re-bar in accordance with the line marks or building specifications	☐	☐
Carried out installation of scaffolding in accordance with OHS requirements	☐	☐
Confirmed types of scaffolding required and identified associated work tasks	☐	☐
Determined projected loading on scaffolding and supporting structure on local and international building codes and project specifications	☐	☐
Set up/erected scaffolding in accordance with work requirements and workplace rules and regulations	☐	☐
Located and positioned reinforcement bars in accordance with structural drawings and specifications	☐	☐
Cleaned and aligned dowels before joining with vertical bars	☐	☐
Located and placed reinforcement using bar chair, ligatures and spacers according to structural drawing/plan and specifications	☐	☐
Installed and secured lateral ties/stirrups in place using appropriate methods	☐	☐
Joined main re-bars using appropriate splicing methods in accordance with relevant requirements.	☐	☐
Bent steel reinforcements for slabs according to design drawing and specifications	☐	☐
Positioned and fixed slab reinforcements in place in accordance with design specifications	☐	☐
Checked location and position of reinforcement and fixing ties to reinforcement for accuracy	☐	☐
Checked depth of coverage, clearance, spacing and overlap of reinforcement materials in accordance with structural drawings/job specifications	☐	☐

Dismantled scaffolding using reverse procedures as for erection in accordance with safety practices	☐	☐
Cleaned, inventoried and returned to storage area scaffolding components based on workplace rules and procedures	☐	☐
Identified heights or levels to be transferred/established from project plans or instructions	☐	☐
Set up, tested and correctly used levelling devices and staffs in accordance with standard operating procedures and manufacturer's guidelines	☐	☐
Measured levels and transferred heights to required location and marked and/or recorded consistent with job requirements	☐	☐
Selected and prepared formwork components and materials consistent with job requirements	☐	☐
Installed formworks components in accordance with specified tolerance requirements	☐	☐
Installed/fixed form panel components in accordance with specified tolerance requirements	☐	☐
Properly secured connectors, braces, locks, bolts and nuts for plastic forms according to job requirements	☐	☐
Repaired and replaced damaged formworks in accordance with work requirements	☐	☐
Performed housekeeping according to worksite safety regulations	☐	☐
Feedback to candidate:		
Assessment decision for this assessment activity: ☐ **Competent** ☐ **Not Yet Competent**		

Candidate's Signature:		**Date:**	
Assessor' Signature:		**Date:**	

:

Set B: Practical Demonstration 1

PRACTICAL DEMONSTRATION 1	
Candidate Name:	
Assessor Name:	
Qualification:	Certificate in Steel Binding and Fabrication
Task:	Fabricate, assemble and install re-bars for column size of 25cm x 25cm (10" x 10") on a column base 75cm x 75cm (30" x 30")
Assessment Centre:	
Date of Assessment:	
Time of Assessment:	

Instructions:

Read and understand the directions carefully:

- this practical demonstration is based on the performance criteria from all or some of the units of competency in Steel Binding and Fabrication
- this assessment activity will be used to measure your underpinning skills
- you will have fifteen (15) minutes to familiarise yourself with the resources to be used
- you have two (2) hours to complete this demonstration

Procedure:

- observe and wear personal protective equipment (PPE) as required for the task to be performed
- read the specification information provided
- collect all materials needed to complete the task
- perform the task within the given time
- observe and follow all health and safety (OHS) requirements at all times

Job Specification Information:

1. Collect all necessary tools and equipment to fabricate, assemble and install re-bars for column with base.
2. Collect steel re-bars for column and column base.
3. Straight the re-bars and remove rust if any, following the right techniques.
4. Determine the size of the column, lateral ties and base.
5. Calculate the length and mark the re-bars with proper tools.
6. Calculate the quantity of steel re-bars for column, lateral ties and column base to be required.
7. Cut and bend the re-bars for column and column base.
8. Assemble the re-bars for column and column base.
9. Report to Assessor for final evaluation.
10. Clean the tools, equipment and work area.
11. Dispose waste materials and excess materials.

Drawing, Plan, Diagram or Sketch:

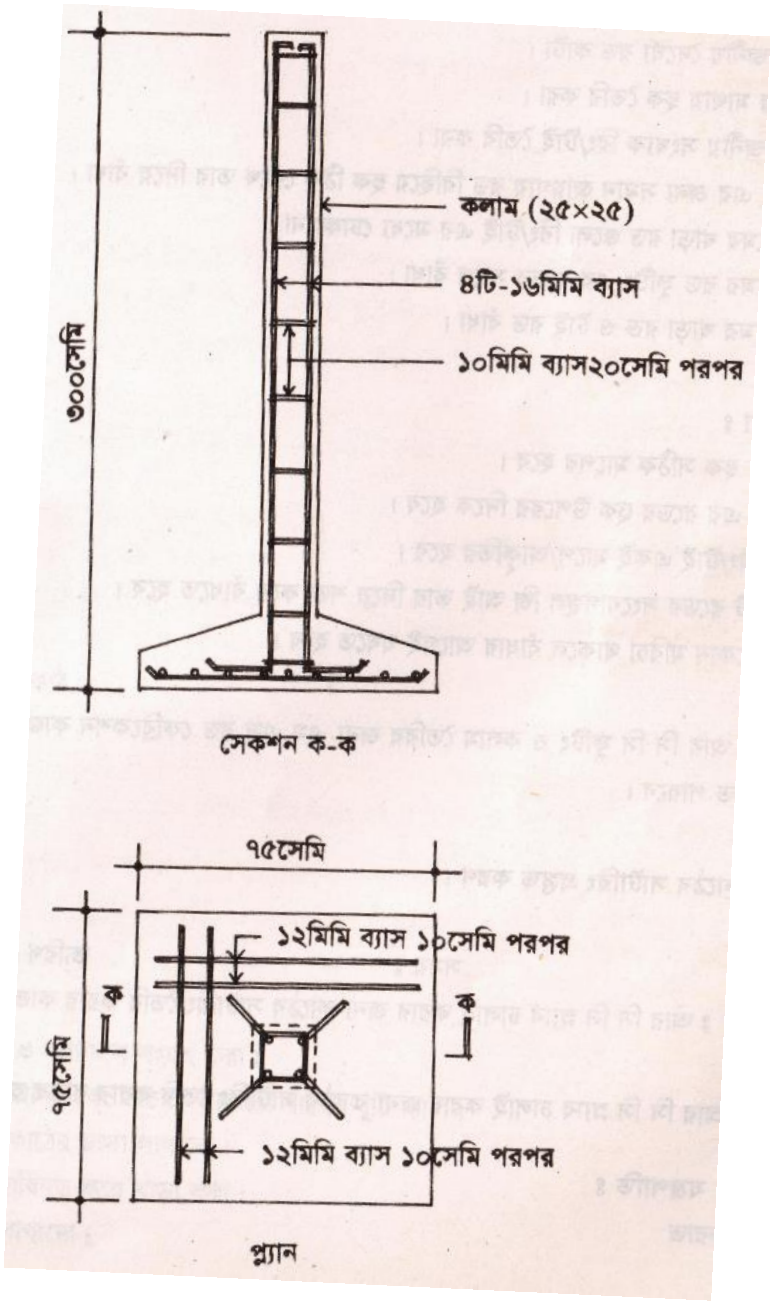
The illustration below is the blueprint of the project to be performed. During fabrication, assembly and installation process for column with base, you are to ensure:

- Squareness
- Spacing of bars
- Shape and hooking angle
- Arrangement of tie bars
- Lapping/splicing

- Tightness
- Measurements

For Column: size will be 25cm x 25cm, height will be 300cm, vertical rebar will be 4-16mmØ, lateral ties will be 10mmØ @ 20cm c/c and clear cover of reinforcement will be 3.75cm.

For Base: size will be 75cm x 75cm, both ways re-bars will be 12mmØ@ 10cm c/c, clear cover of reinforcement will be 7.5cm.



Resources Required:	
Tools:	Measuring tape Steel rule Sledge hammer Cold chisel Hacksaw

	Steel wire twisting tool Steel bar bender Craw bar Re-bar bender stand/table
Equipment:	Steel bar cutting machine Power hacksaw Angle grinder PPR welding set
Machinery:	N/A
Materials:	Steel rebar GI/tie wire Sand paper Steel brush
PPE:	Apron Mask Safety helmet Gloves (long) Safety shoes

Set B: Practical Demonstration 1 – Observation Checklist

PRACTICAL DEMONSTRATION 1 – OBSERVATION CHECKLIST	
Candidate Name:	
Assessor Name:	
Qualification:	Certificate in Steel Binding and Fabrication
Task:	Fabricate, assemble and install re-bars for column size of 25cm x 25cm (10" x 10") on a column base 75cm x 75cm (30" x 30")
Assessment Centre:	
Date of Assessment:	
Instructions:	The tasks listed on the observation checklist of the practical demonstration will provide performance evidence of the candidate. Performance can be observed in an actual workplace or in a simulated working environment. If performance of particular tasks cannot be observed, you may ask the candidate to explain a procedure or enter into a discussion on the subject. The assessment activity (practical demonstration) should: ▪ fit industry requirements in which the assessment will be conducted ▪ adhere, where possible, to reasonable adjustment practices ▪ ensure that suitable performance benchmarks are applied and explained to the candidate

OBSERVATION RECORD		
Performance Criteria	Place a ✓ to show if evidence has been demonstrated competently	
	Yes	**No**
Identified safety signs and symbols	☐	☐
Selected and used personal protective equipment	☐	☐
Maintained personal hygiene	☐	☐
Applied first aid procedure during emergency situations	☐	☐
Selected appropriate tools	☐	☐
Determined application of tools to job requirements	☐	☐
Prepared hand and power tools	☐	☐
Applied proper and safe use/operation is applied in the different types of hand tools	☐	☐
Used power tools safely in accordance to manufacturer's operating specification	☐	☐
Removed dust and foreign matters from power tools in accordance to workplace standard	☐	☐
Checked condition of tools after use	☐	☐

Applied appropriate lubricant after use and prior to storage	☐	☐
Checked and calibrated measuring tools	☐	☐
Inspected and corrected or replaced defective tools, instruments, power tools and accessories	☐	☐
Selected appropriate measuring device for the job	☐	☐
Determined applications of tools to job requirements	☐	☐
Prepared measuring device	☐	☐
Calculated material quantities	☐	☐
Interpreted and communicated results to authority	☐	☐
Removed dust and foreign matters from measuring instrument	☐	☐
Checked condition of instrument	☐	☐
Applied appropriate lubricant after use and prior to storage	☐	☐
Stored instruments according to workplace procedure	☐	☐
Interpreted detailed work specifications in accordance with applicable construction drawings and plans	☐	☐
Identified re-bar materials from design specifications	☐	☐
Assembled bending table	☐	☐
Set-up and get ready bending and cutting equipment	☐	☐
Hauled materials to work site and stationed in accordance with workplace requirements	☐	☐
Accurately measured and marked steel re-bars	☐	☐
Cut steel re-bars using appropriate cutting tools/equipment based on cutting list	☐	☐
Arranged cut steel re-bars in designated area according to workplace requirements	☐	☐
Applied relevant OHS guidelines at all times	☐	☐
Prepared appropriate bending tools and equipment in accordance with the work requirements	☐	☐
Installed bending forms/jigs according to cutting list specifications	☐	☐
Manually bended main bars according to required bar shapes and quantity	☐	☐
Set bending guides/forms based on re-bar size and shape	☐	☐
Bended main steel bars according to required shape and quantity	☐	☐
Accurately measured and marked steel re-bars ready for cutting	☐	☐
Cut steel re-bars using appropriate cutting tools/equipment based on cutting list	☐	☐
Arranged cut steel re-bars in designated area according to workplace requirements	☐	☐
Gather and disposed excess steel re-bars in accordance with workplace procedures	☐	☐

Installed bending forms/jigs according to cutting list specifications	☐	☐
Manually bended main bars according to required bar shapes and quantity	☐	☐
Set bending guides/forms based on re-bar size and shape	☐	☐
Bended main steel bars according to required shape and quantity	☐	☐
Installed stirrup bending guides/forms according to cutting list specifications	☐	☐
Manually bended stirrups according to required stirrup shapes and quantity	☐	☐
Grouped all bended stirrups according to shapes or use	☐	☐
Checked and maintained bending machine components in accordance with manufacturer's specifications	☐	☐
Set bending guides/forms based on re-bar size and shape	☐	☐
Bended stirrup according to required shapes and quantity	☐	☐
Carry out assembly of re-bars for column and base in accordance with OHS requirements	☐	☐
Prepared and assembled metal/wooden supports for main/vertical bars according to work requirements	☐	☐
Held main/vertical bars in position by lateral ties in accordance with the column and base design plan	☐	☐
Determined spacing of main/vertical bars and lateral ties in accordance with the column and base design plan	☐	☐
Ties/welded lateral ties in order to hold the main/vertical bars firmly to its designated position	☐	☐
Identified height or levels to be transferred/established from project plans or instructions	☐	☐
Set up, tested and correctly used levelling devices and staffs in accordance with standard operating procedures and manufacturer's guidelines	☐	☐
Measured levels and transferred heights to required location and marked and/or recorded consistent with job requirements	☐	☐
Documented results of levelling procedure according to organizational requirements	☐	☐
Cleared work area of any obstruction and disposed or recycled scrap materials in accordance with workplace environmental plan and regulations	☐	☐
Cleaned, checked maintained and stored tools and equipment in accordance with manufacturer's specifications and instructions and workplace standard practices	☐	☐
Feedback to candidate:		
Assessment decision for this assessment activity: ☐ **Competent** ☐ **Not Yet Competent**		

Candidate's Signature:		**Date:**	
Assessor' Signature:		**Date:**	

Set B: Practical Demonstration 2

PRACTICAL DEMONSTRATION 2	
Candidate Name:	
Assessor Name:	
Qualification:	Certificate in Steel Binding and Fabrication
Task:	Fabricate, assemble and install re-bars for beam size of 25cm x 40cm (10" x 16") and total length is 350cm
Assessment Centre:	
Date of Assessment:	
Time of Assessment:	

Instructions:

Read and understand the directions carefully:

- this practical demonstration is based on the performance criteria from all or some of the units of competency in Steel Binding and Fabrication
- this assessment activity will be used to measure your underpinning skills
- you will have fifteen (15) minutes to familiarise yourself with the resources to be used
- you have two (2) hours to complete this demonstration

Procedure:

- observe and wear personal protective equipment (PPE) as required for the task to be performed
- read the specification information provided
- collect all materials needed to complete the task
- perform the task within the given time
- observe and follow all health and safety (OHS) requirements at all times

Job Specification Information:

1. Collect all necessary tools and equipment to fabricate, assemble and install re-bars for beam.
2. Collect steel re-bars for beam.
3. Straight the re-bars and remove rust if any, following the right techniques.
4. Determine the size of the beam and stirrups.
5. Calculate the length and mark the re-bars with proper tools.
6. Calculate the quantity of steel re-bars for beam and stirrups to be required.
7. Cut and bend the re-bars for beam and stirrups.
8. Assemble the re-bars for beam and stirrups.
9. Report to Assessor for final evaluation.
10. Clean the tools, equipment and work area.
11. Dispose waste materials and excess materials.

Drawing, Plan, Diagram or Sketch:

The illustration below is the blueprint of the project to be performed. During fabrication, assembly and installation process for beam and stirrups, you are to ensure:

- Squareness
- Spacing of bars
- Shape and hooking angle
- Arrangement of stirrups
- Lapping/splicing
- Tightness

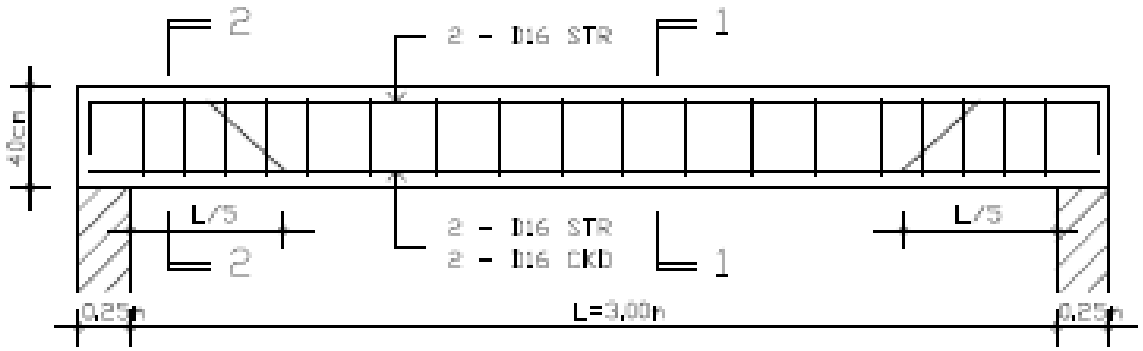
- Measurements

For Beam: size will be 25cm x 40cm, total length will be 350cm

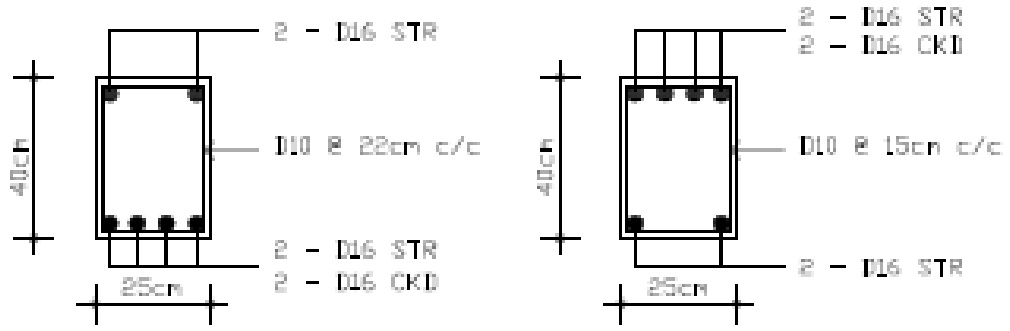
Longitudinal rebars will be 2-16mmØ straight bottom, 2-16mmØ straight top and 2-16mmØ cranked

Stirrups will be 10mmØ @ 30cm c/c (middle-half) and @ 20cm c/c (both ends)

Clear cover of reinforcement will be 3.75cm



LONGITUDINAL SECTION



CROSS SECTION

Resources Required:	
Tools:	Measuring tape Steel rule Sledge hammer Hacksaw Steel wire twisting tool Steel bar bender Re-bar bender stand/table
Equipment:	Steel bar cutting machine Power hacksaw Angle grinder PPR welding set

Materials:	Steel rebar GI/tie wire Sand paper Steel brush
PPE:	Apron Mask Safety helmet Gloves (long) Safety shoes

Set B: Practical Demonstration 2 – Observation Checklist

PRACTICAL DEMONSTRATION 2 – OBSERVATION CHECKLIST	
Candidate Name:	
Assessor Name:	
Qualification:	Certificate in Steel Binding and Fabrication
Task:	Fabricate, assemble and install re-bars for beam size of 25cm x 40cm (10" x 16") and total length is 350cm
Assessment Centre:	
Date of Assessment:	
Instructions:	The tasks listed on the observation checklist of the practical demonstration will provide performance evidence of the candidate. Performance can be observed in an actual workplace or in a simulated working environment. If performance of particular tasks cannot be observed, you may ask the candidate to explain a procedure or enter into a discussion on the subject. The assessment activity (practical demonstration) should: ▪ fit industry requirements in which the assessment will be conducted ▪ adhere, where possible, to reasonable adjustment practices ▪ ensure that suitable performance benchmarks are applied and explained to the candidate

OBSERVATION RECORD		
Performance Criteria	Place a ✓ to show if evidence has been demonstrated competently	
	Yes	**No**
Identified safety signs and symbols	☐	☐
Selected and used personal protective equipment	☐	☐
Maintained personal hygiene	☐	☐
Applied first aid procedure during emergency situations	☐	☐
Selected appropriate tools	☐	☐
Determined application of tools to job requirements	☐	☐
Prepared hand and power tools	☐	☐
Applied proper and safe use/operation is applied in the different types of hand tools	☐	☐
Used power tools safely in accordance to manufacturer's operating specification	☐	☐
Removed dust and foreign matters from power tools in accordance to workplace standard	☐	☐
Checked condition of tools after use	☐	☐

Applied appropriate lubricant after use and prior to storage	☐	☐
Checked and calibrated measuring tools	☐	☐
Inspected and corrected or replaced defective tools, instruments, power tools and accessories	☐	☐
Selected appropriate measuring device for the job	☐	☐
Determined applications of tools to job requirements	☐	☐
Prepared measuring device	☐	☐
Calculated material quantities	☐	☐
Interpreted and communicated results to authority	☐	☐
Removed dust and foreign matters from measuring instrument	☐	☐
Checked condition of instrument	☐	☐
Applied appropriate lubricant after use and prior to storage	☐	☐
Stored instruments according to workplace procedure	☐	☐
Interpreted detailed work specifications in accordance with applicable construction drawings and plans	☐	☐
Identified re-bar materials from design specifications	☐	☐
Assembled bending table	☐	☐
Set-up and get ready bending and cutting equipment	☐	☐
Hauled materials to work site and stationed in accordance with workplace requirements	☐	☐
Accurately measured and marked steel re-bars	☐	☐
Cut steel re-bars using appropriate cutting tools/equipment based on cutting list	☐	☐
Arranged cut steel re-bars in designated area according to workplace requirements	☐	☐
Applied relevant OHS guidelines at all times	☐	☐
Prepared appropriate bending tools and equipment in accordance with the work requirements	☐	☐
Installed bending forms/jigs according to cutting list specifications	☐	☐
Manually bended main bars according to required bar shapes and quantity	☐	☐
Set bending guides/forms based on re-bar size and shape	☐	☐
Bended main steel bars according to required shape and quantity	☐	☐
Accurately measured and marked steel re-bars ready for cutting	☐	☐
Cut steel re-bars using appropriate cutting tools/equipment based on cutting list	☐	☐
Arranged cut steel re-bars in designated area according to workplace requirements	☐	☐
Gather and disposed excess steel re-bars in accordance with workplace procedures	☐	☐

Installed bending forms/jigs according to cutting list specifications	☐	☐
Manually bended main bars according to required bar shapes and quantity	☐	☐
Set bending guides/forms based on re-bar size and shape	☐	☐
Bended main steel bars according to required shape and quantity	☐	☐
Installed stirrup bending guides/forms according to cutting list specifications	☐	☐
Manually bended stirrups according to required stirrup shapes and quantity	☐	☐
Grouped all bended stirrups according to shapes or use	☐	☐
Checked and maintained bending machine components in accordance with manufacturer's specifications	☐	☐
Set bending guides/forms based on re-bar size and shape	☐	☐
Bended stirrup according to required shapes and quantity	☐	☐
Carry out assembly of re-bars for beam in accordance with OHS requirements	☐	☐
Prepared and assembled metal/wooden supports for main bars according to work requirements	☐	☐
Held main bars in position by stirrups in accordance with the beam design	☐	☐
Determined spacing of main bars and stirrups in accordance with the beam design	☐	☐
Ties/welded stirrups in order to hold the main bars firmly to its designated position	☐	☐
Identified height or levels to be transferred/established from project plans or instructions	☐	☐
Set up, tested and correctly used levelling devices and staffs in accordance with standard operating procedures and manufacturer's guidelines	☐	☐
Measured levels and transferred heights to required location and marked and/or recorded consistent with job requirements	☐	☐
Documented results of levelling procedure according to organizational requirements	☐	☐
Cleared work area of any obstruction and disposed or recycled scrap materials in accordance with workplace environmental plan and regulations	☐	☐
Cleaned, checked maintained and stored tools and equipment in accordance with manufacturer's specifications and instructions and workplace standard practices	☐	☐
Feedback to candidate:		

Assessment decision for this assessment activity: ☐ **Competent** ☐ **Not Yet Competent**			
Candidate's Signature:		**Date:**	
Assessor' Signature:		**Date:**	

Set C: Practical Demonstration 1

PRACTICAL DEMONSTRATION 1	
Candidate Name:	
Assessor Name:	
Qualification:	Certificate in Steel Binding and Fabrication
Task:	Fabricate, assemble and install re-bars for column size of 300mm x 300mm (12" x 12") on a column base 1500mm x 1500mm (5" x 5")
Date of Assessment:	
Time of Assessment:	

Instructions:

Read and understand the directions carefully:

- this practical demonstration is based on the performance criteria from all or some of the units of competency in Steel Binding and Fabrication
- this assessment activity will be used to measure your underpinning skills
- you will have fifteen (15) minutes to familiarise yourself with the resources to be used
- you have two (2) hours to complete this demonstration

Procedure:

- observe and wear personal protective equipment (PPE) as required for the task to be performed
- read the specification information provided
- collect all materials needed to complete the task
- perform the task within the given time
- observe and follow all health and safety (OHS) requirements at all times

Job Specification Information:

1. Collect all necessary tools and equipment to fabricate, assemble and install re-bars for column with base.
2. Collect steel re-bars for column and column base.
3. Straight the re-bars and remove rust if any, following the right techniques.
4. Determine the size of the column, lateral ties and base.
5. Calculate the length and mark the re-bars with proper tools.
6. Calculate the quantity of steel re-bars for column, lateral ties and column base to be required.
7. Cut and bend the re-bars for column and column base.
8. Assemble the re-bars for column and column base.
9. Report to Assessor for final evaluation.
10. Clean the tools, equipment and work area.
11. Dispose waste materials and excess materials.

Drawing, Plan, Diagram or Sketch:

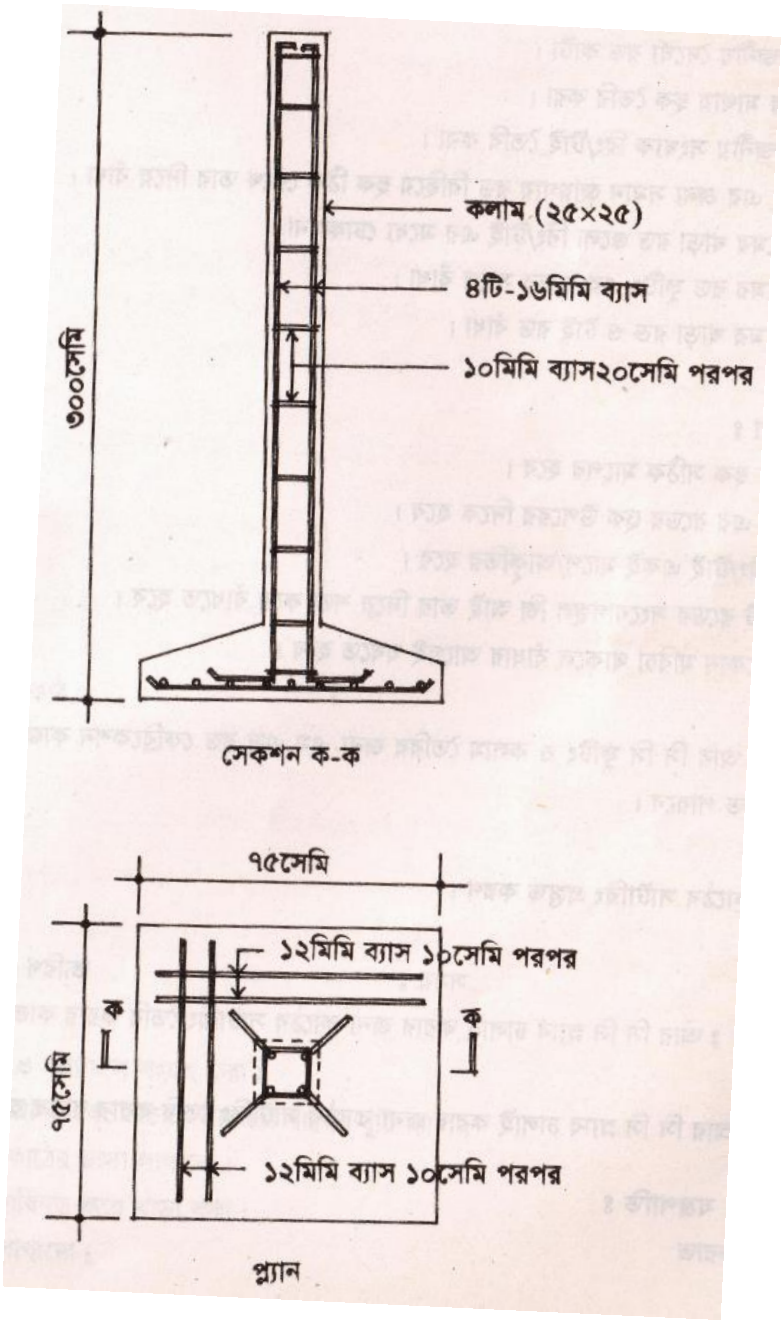
The illustration below is the blueprint of the project to be performed. During fabrication, assembly and installation process for column with base, you are to ensure:

- Squareness
- Spacing of bars
- Shape and hooking angle
- Arrangement of tie bars
- Lapping/splicing
- Tightness

- Measurements

For Column: size will be 30cm x 30cm

For Base: size will be 150cm x 150cm



Resources Required:	
Tools:	Measuring tape Steel rule Sledge hammer Cold chisel Hacksaw Steel wire twisting tool Steel bar bender

	Craw bar Re-bar bender stand/table
Equipment:	Steel bar cutting machine Power hacksaw Angle grinder PPR welding set
Machinery:	N/A
Materials:	Steel rebar GI/tie wire Sand paper Steel brush
PPE:	Apron Mask Safety helmet Gloves (long) Safety shoes

Set C: Practical Demonstration 1 – Observation Checklist

PRACTICAL DEMONSTRATION 1 – OBSERVATION CHECKLIST	
Candidate Name:	
Assessor Name:	
Qualification:	Certificate in Steel Binding and Fabrication
Task:	Fabricate, assemble and install re-bars for column size of 300mm x 300mm (12” x 12”) on a column base 1500mm x 1500mm (5” x 5”)
Assessment Centre:	
Date of Assessment:	
Instructions:	The tasks listed on the observation checklist of the practical demonstration will provide performance evidence of the candidate. Performance can be observed in an actual workplace or in a simulated working environment. If performance of particular tasks cannot be observed, you may ask the candidate to explain a procedure or enter into a discussion on the subject. The assessment activity (practical demonstration) should: ▪ fit industry requirements in which the assessment will be conducted ▪ adhere, where possible, to reasonable adjustment practices ▪ ensure that suitable performance benchmarks are applied and explained to the candidate

OBSERVATION RECORD		
Performance Criteria	Place a ✓ to show if evidence has been demonstrated competently	
	Yes	**No**
Identified safety signs and symbols	☐	☐
Selected and used personal protective equipment	☐	☐
Maintained personal hygiene	☐	☐
Applied first aid procedure during emergency situations	☐	☐
Selected appropriate tools	☐	☐
Determined application of tools to job requirements	☐	☐
Prepared hand and power tools	☐	☐
Applied proper and safe use/operation is applied in the different types of hand tools	☐	☐
Used power tools safely in accordance to manufacturer’s operating specification	☐	☐
Removed dust and foreign matters from power tools in accordance to workplace standard	☐	☐
Checked condition of tools after use	☐	☐

Applied appropriate lubricant after use and prior to storage	☐	☐
Checked and calibrated measuring tools	☐	☐
Inspected and corrected or replaced defective tools, instruments, power tools and accessories	☐	☐
Selected appropriate measuring device for the job	☐	☐
Determined applications of tools to job requirements	☐	☐
Prepared measuring device	☐	☐
Calculated material quantities	☐	☐
Interpreted and communicated results to authority	☐	☐
Removed dust and foreign matters from measuring instrument	☐	☐
Checked condition of instrument	☐	☐
Applied appropriate lubricant after use and prior to storage	☐	☐
Stored instruments according to workplace procedure	☐	☐
Interpreted detailed work specifications in accordance with applicable construction drawings and plans	☐	☐
Identified re-bar materials from design specifications	☐	☐
Assembled bending table	☐	☐
Set-up and get ready bending and cutting equipment	☐	☐
Hauled materials to work site and stationed in accordance with workplace requirements	☐	☐
Accurately measured and marked steel re-bars	☐	☐
Cut steel re-bars using appropriate cutting tools/equipment based on cutting list	☐	☐
Arranged cut steel re-bars in designated area according to workplace requirements	☐	☐
Applied relevant OHS guidelines at all times	☐	☐
Prepared appropriate bending tools and equipment in accordance with the work requirements	☐	☐
Installed bending forms/jigs according to cutting list specifications	☐	☐
Manually bended main bars according to required bar shapes and quantity	☐	☐
Set bending guides/forms based on re-bar size and shape	☐	☐
Bended main steel bars according to required shape and quantity	☐	☐
Accurately measured and marked steel re-bars ready for cutting	☐	☐
Cut steel re-bars using appropriate cutting tools/equipment based on cutting list	☐	☐
Arranged cut steel re-bars in designated area according to workplace requirements	☐	☐
Gather and disposed excess steel re-bars in accordance with workplace procedures	☐	☐

Installed bending forms/jigs according to cutting list specifications	☐	☐
Manually bended main bars according to required bar shapes and quantity	☐	☐
Set bending guides/forms based on re-bar size and shape	☐	☐
Bended main steel bars according to required shape and quantity	☐	☐
Installed stirrup bending guides/forms according to cutting list specifications	☐	☐
Manually bended stirrups according to required stirrup shapes and quantity	☐	☐
Grouped all bended stirrups according to shapes or use	☐	☐
Checked and maintained bending machine components in accordance with manufacturer's specifications	☐	☐
Set bending guides/forms based on re-bar size and shape	☐	☐
Bended stirrup according to required shapes and quantity	☐	☐
Carry out assembly of re-bars for column and base in accordance with OHS requirements	☐	☐
Prepared and assembled metal/wooden supports for main/vertical bars according to work requirements	☐	☐
Held main/vertical bars in position by lateral ties in accordance with the column and base design plan	☐	☐
Determined spacing of main/vertical bars and lateral ties in accordance with the column and base design plan	☐	☐
Ties/welded lateral ties in order to hold the main/vertical bars firmly to its designated position	☐	☐
Identified height or levels to be transferred/established from project plans or instructions	☐	☐
Set up, tested and correctly used levelling devices and staffs in accordance with standard operating procedures and manufacturer's guidelines	☐	☐
Measured levels and transferred heights to required location and marked and/or recorded consistent with job requirements	☐	☐
Documented results of levelling procedure according to organizational requirements	☐	☐
Cleared work area of any obstruction and disposed or recycled scrap materials in accordance with workplace environmental plan and regulations	☐	☐
Cleaned, checked maintained and stored tools and equipment in accordance with manufacturer's specifications and instructions and workplace standard practices	☐	☐
Feedback to candidate:		

Assessment decision for this assessment activity: ☐ **Competent** ☐ **Not Yet Competent**			
Candidate's Signature:		**Date:**	
Assessor' Signature:		**Date:**	

Set C: Practical Demonstration 2

PRACTICAL DEMONSTRATION 2	
Candidate Name:	
Assessor Name:	
Qualification:	Certificate in Steel Binding and Fabrication
Task:	Fabricate, assemble and install re-bars for beam size of 300mm x 400mm (12" x 16") and total length is 2500mm
Assessment Centre:	
Date of Assessment:	
Time of Assessment:	

Instructions:

Read and understand the directions carefully:

- this practical demonstration is based on the performance criteria from all or some of the units of competency in Steel Binding and Fabrication
- this assessment activity will be used to measure your underpinning skills
- you will have fifteen (15) minutes to familiarise yourself with the resources to be used
- you have two (2) hours to complete this demonstration

Procedure:

- observe and wear personal protective equipment (PPE) as required for the task to be performed
- read the specification information provided
- collect all materials needed to complete the task
- perform the task within the given time
- observe and follow all health and safety (OHS) requirements at all times

Job Specification Information:

1. Collect all necessary tools and equipment to fabricate, assemble and install re-bars for beam.
2. Collect steel re-bars for beam.
3. Straight the re-bars and remove rust if any, following the right techniques.
4. Determine the size of the beam and stirrups.
5. Calculate the length and mark the re-bars with proper tools.
6. Calculate the quantity of steel re-bars for beam and stirrups to be required.
7. Cut and bend the re-bars for beam and stirrups.
8. Assemble the re-bars for beam and stirrups.
9. Report to Assessor for final evaluation.
10. Clean the tools, equipment and work area.
11. Dispose waste materials and excess materials.

Drawing, Plan, Diagram or Sketch:

The illustration below is the blueprint of the project to be performed. During fabrication, assembly and installation process for beam and stirrups, you are to ensure:

- Squareness
- Spacing of bars
- Shape and hooking angle
- Arrangement of stirrups
- Lapping/splicing
- Tightness

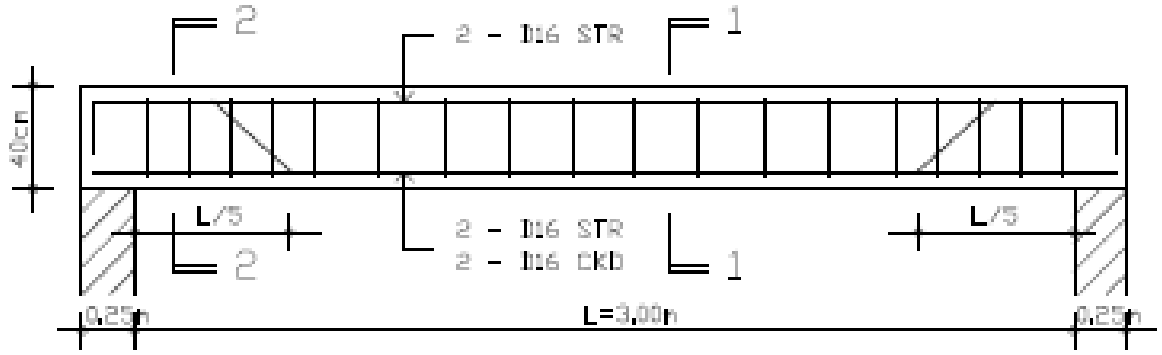
- Measurements

For Beam: size will be 30cm x 40cm, total length will be 350cm

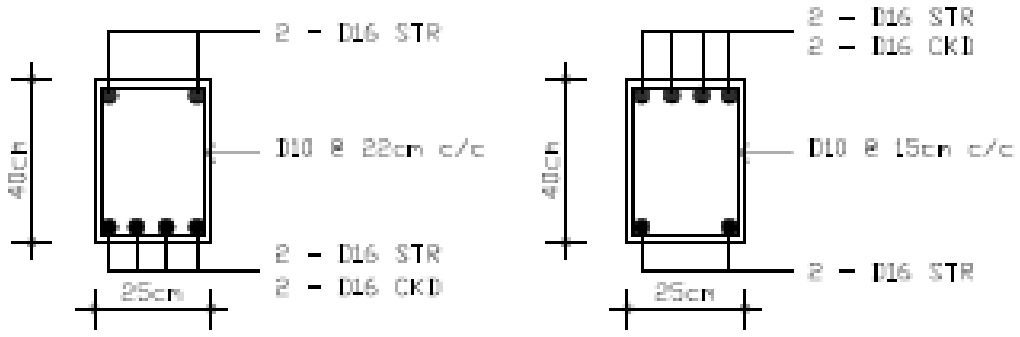
Longitudinal rebars will be 2-16mmØ straight bottom, 2-16mmØ straight top and 2-16mmØ cranked

Stirrups will be 10mmØ @ 30cm c/c (middle-half) and @ 20cm c/c (both ends)

Clear cover of reinforcement will be 3.75cm



LONGITUDINAL SECTION



CROSS SECTION

Resources Required:	
Tools:	Measuring tape Steel rule Sledge hammer Hacksaw Steel wire twisting tool Steel bar bender Re-bar bender stand/table
Equipment:	Steel bar cutting machine Power hacksaw Angle grinder PPR welding set

Machinery:	N/A
Materials:	Steel rebar GI/tie wire Sand paper Steel brush
PPE:	Apron Mask Safety helmet Gloves (long) Safety shoes

Set C: Practical Demonstration 2 – Observation Checklist

PRACTICAL DEMONSTRATION 2 – OBSERVATION CHECKLIST	
Candidate Name:	
Assessor Name:	
Qualification:	Certificate in Steel Binding and Fabrication
Task:	Fabricate, assemble and install re-bars for beam size of 300mm x 400mm (12" x 16") and total length is 2500mm
Assessment Centre:	
Date of Assessment:	
Instructions:	The tasks listed on the observation checklist of the practical demonstration will provide performance evidence of the candidate. Performance can be observed in an actual workplace or in a simulated working environment. If performance of particular tasks cannot be observed, you may ask the candidate to explain a procedure or enter into a discussion on the subject. The assessment activity (practical demonstration) should: ▪ fit industry requirements in which the assessment will be conducted ▪ adhere, where possible, to reasonable adjustment practices ▪ ensure that suitable performance benchmarks are applied and explained to the candidate

OBSERVATION RECORD		
Performance Criteria	Place a ✓ to show if evidence has been demonstrated competently	
	Yes	**No**
Identified safety signs and symbols	☐	☐
Selected and used personal protective equipment	☐	☐
Maintained personal hygiene	☐	☐
Applied first aid procedure during emergency situations	☐	☐
Selected appropriate tools	☐	☐
Determined application of tools to job requirements	☐	☐
Prepared hand and power tools	☐	☐
Applied proper and safe use/operation is applied in the different types of hand tools	☐	☐
Used power tools safely in accordance to manufacturer's operating specification	☐	☐
Removed dust and foreign matters from power tools in accordance to workplace standard	☐	☐
Checked condition of tools after use	☐	☐

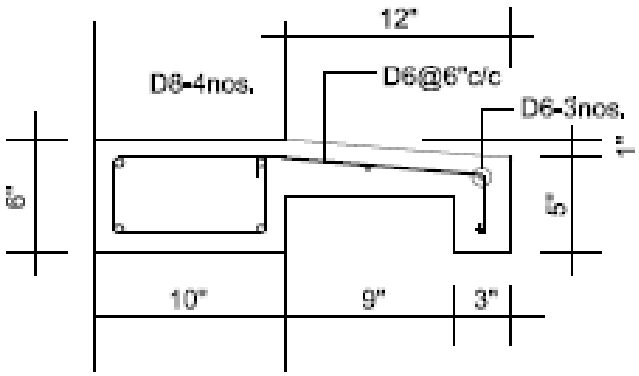
Applied appropriate lubricant after use and prior to storage	☐	☐
Checked and calibrated measuring tools	☐	☐
Inspected and corrected or replaced defective tools, instruments, power tools and accessories	☐	☐
Selected appropriate measuring device for the job	☐	☐
Determined applications of tools to job requirements	☐	☐
Prepared measuring device	☐	☐
Calculated material quantities	☐	☐
Interpreted and communicated results to authority	☐	☐
Removed dust and foreign matters from measuring instrument	☐	☐
Checked condition of instrument	☐	☐
Applied appropriate lubricant after use and prior to storage	☐	☐
Stored instruments according to workplace procedure	☐	☐
Interpreted detailed work specifications in accordance with applicable construction drawings and plans	☐	☐
Identified re-bar materials from design specifications	☐	☐
Assembled bending table	☐	☐
Set-up and get ready bending and cutting equipment	☐	☐
Hauled materials to work site and stationed in accordance with workplace requirements	☐	☐
Accurately measured and marked steel re-bars	☐	☐
Cut steel re-bars using appropriate cutting tools/equipment based on cutting list	☐	☐
Arranged cut steel re-bars in designated area according to workplace requirements	☐	☐
Applied relevant OHS guidelines at all times	☐	☐
Prepared appropriate bending tools and equipment in accordance with the work requirements	☐	☐
Installed bending forms/jigs according to cutting list specifications	☐	☐
Manually bended main bars according to required bar shapes and quantity	☐	☐
Set bending guides/forms based on re-bar size and shape	☐	☐
Bended main steel bars according to required shape and quantity	☐	☐
Accurately measured and marked steel re-bars ready for cutting	☐	☐
Cut steel re-bars using appropriate cutting tools/equipment based on cutting list	☐	☐
Arranged cut steel re-bars in designated area according to workplace requirements	☐	☐
Gather and disposed excess steel re-bars in accordance with workplace procedures	☐	☐

Installed bending forms/jigs according to cutting list specifications	☐	☐
Manually bended main bars according to required bar shapes and quantity	☐	☐
Set bending guides/forms based on re-bar size and shape	☐	☐
Bended main steel bars according to required shape and quantity	☐	☐
Installed stirrup bending guides/forms according to cutting list specifications	☐	☐
Manually bended stirrups according to required stirrup shapes and quantity	☐	☐
Grouped all bended stirrups according to shapes or use	☐	☐
Checked and maintained bending machine components in accordance with manufacturer's specifications	☐	☐
Set bending guides/forms based on re-bar size and shape	☐	☐
Bended stirrup according to required shapes and quantity	☐	☐
Carry out assembly of re-bars for beam in accordance with OHS requirements	☐	☐
Prepared and assembled metal/wooden supports for main bars according to work requirements	☐	☐
Held main bars in position by stirrups in accordance with the beam design	☐	☐
Determined spacing of main bars and stirrups in accordance with the beam design	☐	☐
Ties/welded stirrups in order to hold the main bars firmly to its designated position	☐	☐
Identified height or levels to be transferred/established from project plans or instructions	☐	☐
Set up, tested and correctly used levelling devices and staffs in accordance with standard operating procedures and manufacturer's guidelines	☐	☐
Measured levels and transferred heights to required location and marked and/or recorded consistent with job requirements	☐	☐
Documented results of levelling procedure according to organizational requirements	☐	☐
Cleared work area of any obstruction and disposed or recycled scrap materials in accordance with workplace environmental plan and regulations	☐	☐
Cleaned, checked maintained and stored tools and equipment in accordance with manufacturer's specifications and instructions and workplace standard practices	☐	☐
Feedback to candidate:		

Assessment decision for this assessment activity: ☐ **Competent** ☐ **Not Yet Competent**			
Candidate's Signature:		**Date:**	
Assessor' Signature:		**Date:**	

Oral Questions (Optional)

ORAL QUESTIONS - INSTRUCTIONS	
Candidate Name:	
Assessor Name:	
Qualification:	Certificate in Steel Binding and Fabrication
Unit of Competency	
Generic Competencies	
SEIP-CON-STE-01-G	Perform computations using basic mathematical concepts
SEIP-CON-STE-02-G	Apply occupational health and safety (OHS) practices in the workplace
SEIP-CON-STE-03-G	Communicate in English in the workplace
SEIP-CON-STE-04-G	Operate in a self-directed team
Sector-specific Competencies	
SEIP-CON-STE0-01-S	Translate drawings, plans and specifications
SEIP-CON-STE-02-S	Work with hand tools and power tools
SEIP-CON-STE-03-S	Carry-out measurements and calculations
Occupation-specific Competencies	
SEIP-CON-STE-01-O	Perform preparation works
SEIP-CON-STE-02-O	Perform fabrication works
SEIP-CON-STE-03-O	Perform assembly of prefabricated steel works
SEIP-CON-STE-04-O	Perform steel re-bar installation works
SEIP-CON-STE-05-O	Perform basic construction levelling procedures
SEIP-CON-STE-06-O	Perform formworks installation
Assessment Centre:	
Date of Assessment:	
Time of Assessment:	
Instructions:	
Read and understand the directions carefully: ▪ these oral questions are based on the performance criteria from all the units of competency in Steel Binding and Fabrication ▪ oral questions are designed to enable additional assessment of your underpinning knowledge ▪ you should present your responses as directed by the assessor ▪ answer all the questions asked by the assessor as best as possible	

ORAL QUESTIONS			
Question		Place a ✓ in the appropriate box to show if evidence has been demonstrated competently	
		Yes	**No**
1.	Length of a water tank is 2 metres, breadth 1 metre and height is 1 metre. How many litres of water is required to fill 80% space the water tank?	☐	☐
2.	What tools you will need to bend a 12mmØ steel re-bar in the workplace?	☐	☐
3.	Interpret the following visual information: 	☐	☐
4.	What are your duties and responsibilities as a Steel Binder and Fabricator?	☐	☐
5.	Interpret the following technical drawing: 	☐	☐
6.	What is the official system of measurement in almost every country in the world?	☐	☐
7.	Write the usefulness of cotton rags.	☐	☐
8.	Why is mild steel used in RCC works?	☐	☐
9.	What is the function of main/vertical bars used in column?	☐	☐
10.	What are the braces?	☐	☐
11.	What are the functions of stirrups in beam?	☐	☐
12.	What is meant by catch basin?	☐	☐
13.	The following are the most common potential hazards for workers in construction include (but not limited to): Failure to use proper personal protective equipment and Falls from height.	☐	☐

	Razu as a construction worker, please state possible reasons for this type of hazards and responsibilities that he can take to reduce accident.		
14.	Razu has finished making some stirrups as per drawing for a cantilever beam of equal section. But the Design Engineer change the section with varying of depth. Now what steps should he take and how will Razu carry out the job efficiently?	☐	☐
15.	Razu need to dismantle a brick layer's scaffolds, what preparation should he take before dismantling works starts?	☐	☐
16.	Razu has a construction work on slopped land. According to building layout plan and other drawings he has provided the column footings and erect the steel re-bar for columns properly. Now he need to assemble and install re-bars for foundation beams. What steps should Razu to take and how he can establish the foundation beam in same level?	☐	☐
17.	There are two parallel walls of two buildings, gap between them is narrow and the passage is very busy. But you need to repair the walls. In this circumstance what type of shoring will be provided there and why?	☐	☐

Feedback to candidate:

Assessment decision for this assessment activity:

☐ **Competent** ☐ **Not Yet Competent**

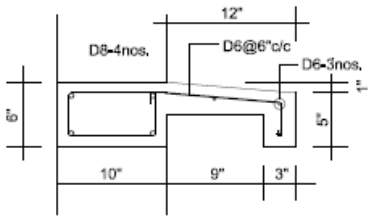
Candidate's Signature:		**Date:**	
Assessor' Signature:		**Date:**	

Oral Questioning Guideline

General Guidelines For Effective Questioning
▪ Keep questions short and focused on one key concept
▪ Ensure that questions are structured
▪ Test the questions to check that they are not ambiguous
▪ Use `open-ended questions such as `what if...?' and `why...?' questions, rather than closed questions
▪ Keep questions clear and straight forward and ask one at a time
▪ Use words that the candidate is able to understand
▪ Look at the candidate when asking questions
▪ Check to ensure that the candidate fully understands the questions
▪ Ask the candidate to clarify or re-phrase their answer if the assessor does not understand the initial response
▪ Confirm the candidate's response by repeating the answer back in his/her own words
▪ Encourage a conversational approach with the candidate when appropriate, to put him or her at ease
▪ Use questions or statements as prompts for keeping focused on the purpose of the questions and the kind of evidence being collected
▪ Use language at a suitable level for the candidate
▪ Listen carefully to the answers for opportunities to find unexpected evidence
▪ Follow up responses with further questions, if useful, to draw out more evidence or to make links between knowledge areas
▪ Compile a list of acceptable responses to ensure reliability of assessments

Oral Questions (Optional) - Answers

Answers are highlighted in **bold** and *italics*.

ORAL QUESTIONS		
Question		**Answer**
1.	Length of a water tank is 2 meter, breadth 1 meter and height is 1 meter. How many litres of water is required to fill 80% space the water tank?	***1600 litres***
2.	What tools will you need to bend a 12mmØ steel re-bar in the workplace?	***Steel re-bar bender***
3.	Interpret the following visual information 	Interpret the following visual information ***a) No entrance***  ***b) Go this way***  ***c) Construction work in progress*** 
4.	What are your duties and responsibilities as a Steel Binder and Fabricator?	▪ ***Awareness of and practice of safety in the workplace*** ▪ ***Awareness on the proper use of the supplies and materials*** ▪ ***Perform steel binding & fabrication activities such as (but not limited to): cutting, bending installation.*** ▪ ***Responsible in the proper use of the tools and equipment***
5.	Interpret the following Technical drawing 	**This is a cross sectional drawing of a lintel with sunshade showing measurement details. Size of lintel is 10"x6" and projection of sunshade is 12". Steel re-bars used in lintel and sunshade also shown.**

6.	What is the official system of measurement in almost every country in the world?	***Metric system of measurement***
7.	Write the usefulness of cotton rags.	***Cotton rags are easy to use in cleaning the work area for steel binding & fabrication***
8.	Why is mild steel used in RCC works?	***May include but are not limited to:*** • ***Mild steel is highly ductile*** • ***Mild steel can be recycled easily*** • ***It can be easily welded*** • ***It is widely and cheaply available compared to other ductile metals*** • ***The yield stress is nearly equal to elastic stress and elastic limit curves is linear straight***
9.	What are the functions of main and distribution reinforcement in slab?	***May include but not limited to:*** ***Main reinforcement is provided for resistance to bending, which is similar to flexural reinforcing in beams. Distribution rebars are auxiliary bars. They don't have a structural necessity, theoretically. But they help in distribution of support negative moments. I.e. Hogging moments***
10.	What are the braces?	***Braces are the diagonal members that are connected with standards to stiffen the scaffold***
11.	What are the functions of stirrups in beam?	***Stirrups was used for the shear reinforcement in beams***
12.	What is meant by catch basin?	***A pit in a drainage system which might otherwise block a sewer is collected so that it may periodically be removed.***
13.	The following are the most common potential hazards for workers in construction include (but not limited to): Failure to use proper personal protective equipment and Falls from height. Razu as a construction worker, please state possible reasons for this type of hazards and responsibilities that he can take to reduce accident.	***Not learning the company policies with regards to the wearing of PPE.*** ***Not knowing the importance of PPE in the workplace.*** ***Not taking extra precautions when doing work.*** ***Razu should know basic OSH as well as company policies on OSH. Razu should put into practice his learning.***
14.	Razu has finished making some stirrups as per drawing for a cantilever beam of equal section. But the Design Engineer change the section with varying of depth. Now what steps should take and how Razu can carry out the job efficiently?	***Razu should communicate with his Design Engineer. Razu Should also study carefully the changes made before he tries to implement the change.***
15.	Razu need to dismantle a brick layer's scaffolds, what preparation should he take before dismantling works starts.	**May include but are not limited to the following:** • ***Razu should wear PPE*** • ***Take precautions before dismantling*** • ***Have plans and prepare for work***

16.	Razu has a construction work on slopped land. According to building layout plan and other drawings he has provided the column footings and erect the steel re-bar for columns properly. Now he need to assemble and install re-bars for foundation beams. What steps should Razu take and how he can establish the foundation beam in same level?	• ***Cut trench along the columns*** • ***Check level*** • ***Formwork as per section*** • ***Place pre-fabricated beams in the formwork***
17.	There are two parallel walls of two buildings, gap between them is narrow and the passage is very busy. But you need to repair the walls. In this circumstance what type of shoring will be provided there and why?	***Flying or horizontal shoring is the best for this. In this type, horizontal supports are provided for supporting temporarily the parallel walls of the two adjacent buildings. People can easily move under this structure***

Assessment Evidence Summary Sheet

EVIDENCE SUMMARY SHEET			
Candidate Name:			
Assessor Name:			
Qualification:	Certificate in Steel Binding and Fabrication		
Assessment Centre:			
Date(s) of Assessment:			
The performance of the candidate in the following unit or units of competency and the methods engaged to assess performance are as follows:			
Unit of Competency	**Assessment Method**	**Competent**	**Not Yet Competent**
All units of competency comprising of the qualification	Written Test	☐	☐
	Practical Demonstration 1 (Set ….)	☐	☐
	Practical Demonstration 2 (Set ….)	☐	☐
	Oral Questioning (optional)	☐	☐
Note: Issuance of a certificate will only be given to a candidate who has successfully been assessed as competent for **ALL** units of competency.			
Recommendation			
❑ Issuance of Statement of Achievement *(indicate title of SOA, if full Certificate is not met)*	❑ Submission of additional documents Specify:	❑ Reassessment Specify:	
Did the candidate overall performance meet the required evidence/standard?		☐ Yes ☐ No	
Overall Evaluation:	❑ **Competent**	❑ **Not Yet Competent**	
General Comments:			
Candidate Signature:		Date:	
Assessor Signature:		Date:	
Institution Manager Signature:		Date:	

CANDIDATES COPY

(Please presents this form when you claim your Certificate)

ASSESSMENT RESULTS SUMMARY			
Qualification:	Certificate in Steel Binding and Fabrication		
Name of Candidate:		**Date:**	
Name at Assessment Centre:		**Date:**	
Assessment Results:	❑ **Competent** ❑ **Not Yet Competent**		
Recommendation:	❑ Issuance of SOA *(indicate title of SOA if full certificate is not met)*		
	❑ Submission of additional documents – specify:		
	❑ Reassessment - specify:		
Assessed by: (name and signature)		**Date:**	
Attested by: (name and signature):		**Date**	

Assessment Validation Map

This identifies how the assessment tools in this resource assess:

- elements and performance criteria
- critical aspects of assessment
- skills and knowledge
- employability skills

Unit of Competency:	SEIP-CON-STE-01-G – Perform computations using basic mathematical concepts		
Element	**Assessment Evidence Method**		
	Written	**Practical**	**Oral**
1. Identify calculation requirements in the workplace.	1	A1, A2, B1, B2, C1, C2	1
2. Select appropriate mathematical methods for the calculation.	1	A1, A2, B1, B2, C1, C2	1
3. Use basic mathematical formula to perform calculation.	1	A1, A2, B1, B2, C1, C2	1
Unit of Competency:	SEIP-CON-STE-02-G - Apply occupational health and safety (OHS) practices in the workplace		
Element	**Assessment Evidence Method**		
	Written	**Practical**	**Oral**
1. Identify OHS policies and procedures.	9	A1, A2, B1, B2, C1, C2	13, 15
2. Apply personal health and practices.	11, 14	A1, A2, B1, B2, C1, C2	13, 15
3. Report hazards and risks.	9, 12		
4. Respond to emergencies.	1, 12		
Unit of Competency:	SEIP-CON-STE-03-G – Communicate in English in the workplace		
Element	**Assessment Evidence Method**		
	Written	**Practical**	**Oral**
1. Read and understand workplace documents in English.			3, 14

2. Write simple workplace written communication in English.		A1, A2, B1, B2, C1, C2	
3. Listen and comprehend to English conversation.		A1, A2, B1, B2, C1, C2	14
4. Perform conversations in English.		A1, A2, B1, B2, C1, C2	3, 14

Unit of Competency:	SEIP-CON-STE-04-G – Operate in a self-directed team

Element	**Assessment Evidence Method**		
	Written	**Practical**	**Oral**
1. Identify team goals and work processes.	3		4
2. Communicate and cooperate with team members.	16	A1, A2, B1, B2, C1, C2	
3. Work as a team member.	10	A1, A2, B1, B2, C1, C2	
4. Solve problem as team member.	10	A1, A2, B1, B2, C1, C2	

Unit of Competency:	SEIP-CON-STE-01-S – Translate drawings, plans and specifications

Element	**Assessment Evidence Method**		
	Written	**Practical**	**Oral**
1. Access information from manuals, designs and plans.	5		
2. Interpret drawings and specifications from manuals, designs and plans.		A1, A2, B1, B2, C1, C2	5, 14
3. Store manuals, designs and plans.			14

Unit of Competency:	SEIP-CON-STE-02-S – Work with hand tools and power tools

Element	**Assessment Evidence Method**		
	Written	**Practical**	**Oral**
1. Inspect hand tools and power tools for usability.		A1, A2, B1, B2, C1, C2	2

2. Use hand tools properly and safely.	4, 15	A1, A2, B1, B2, C1, C2	2
3. Operate power tools properly and safely.		A1, A2, B1, B2, C1, C2	
4. Clean/maintain hand tools and power tools after use.		A1, A2, B1, B2, C1, C2	

Unit of Competency:	SEIP-CON-STE-03-S – Carry out measurements and calculations

Element	**Assessment Evidence Method**		
	Written	**Practical**	**Oral**
1. Check usability of measuring devices.		A1, A2, B1, B2, C1, C2	
2. Carry out accurate construction work measurements.	20	A1, A2, B1, B2, C1, C2	6
3. Execute simple construction work calculations.		A1, A2, B1, B2, C1, C2	
4. Clean and maintain instruments.		A1, A2, B1, B2, C1, C2	7

Unit of Competency:	SEIP-CON-STE-01-O – Perform preparation works

Element	**Assessment Evidence Method**		
	Written	**Practical**	**Oral**
1. Acquire job assignment from lead man.		A1, A2, B1, B2, C1, C2	
2. Read and interpret construction drawing.		A1, A2, B1, B2, C1, C2	
3. Check work area.	18	A1, A2, B1, B2, C1, C2	
4. Prepare hand tools, equipment and materials.		A1, A2, B1, B2, C1, C2	

Unit of Competency:	SEIP-CON-STE-02-O – Perform fabrication works

Element	Assessment Evidence Method		
	Written	**Practical**	**Oral**
1. Cut steel re-bars.		A1, B1, B2, C1, C2	8
2. Bend main bars using manual benders.	17	A1, B1, B2, C1, C2	
3. Bend main bar using bending machine.		A1, B1, B2, C1, C2	
4. Bend stirrups using manual bender.	6	A1, B1, B2, C1, C2	11
5. Bend stirrups using bending machine.	6	A1, B1, B2, C1, C2	11
6. Clean/maintain the workplace.		A1, A2, B1, B2, C1, C2	

Unit of Competency:	SEIP-CON-STE-03-O – Perform assembly of prefabricated steel works

Element	Assessment Evidence Method		
	Written	**Practical**	**Oral**
1. Assemble re-bars for columns.	2, 7	A1, B1, C1	
2. Assemble re-bars for beams.	6	B2, C2	11
3. Assemble re-bars for joist.		A2	
4. Assemble re-bars for girders.	7		
5. Assemble re-bars for slabs.	8		
6. Assemble re-bars for board piles/pile cap.			11

Unit of Competency:	SEIP-CON-STE-04-O – Perform steel re-bar installation works

Element	Assessment Evidence Method		
	Written	**Practical**	**Oral**
1. Check reference point for determining elevation and centre line.		A1, B1, B2, C1, C2	

2. Install scaffolding.		A1, B1, B2, C1, C2	10
3. Install re-bars for building elements.	8	A1, B1, B2, C1, C2	9
4. Check reinforcement prior to pouring concrete.		A1, B1, B2, C1, C2	
5. Dismantle scaffolding.		A1, A2, B1, B2, C1, C2	

Unit of Competency:	SEIP-CON-STE-05-O – Perform basic construction levelling procedures

Element	**Assessment Evidence Method**		
	Written	**Practical**	**Oral**
1. Plan and prepare for work.	18, 19	A1, A2, B1, B2, C1, C2	
2. Set up and use levelling device.	19	A1, A2, B1, B2, C1, C2	
3. Clean/maintain work area.		A1, A2, B1, B2, C1, C2	

Unit of Competency:	SEIP-CON-STE-06-O – Perform formworks installation

Element	**Assessment Evidence Method**		
	Written	**Practical**	**Oral**
1. Plan and prepare formwork installation.	13	A2	
2. Install formworks for building elements.		A2	
3. Install formworks for catch basin and manhole.			12
4. Repair and replace damaged formworks.		A2	