



# Skills for Employment Investment Program (SEIP)

# FOR SHUTTERING AND SCAFFOLDING (CONSTRUCTION SECTOR)

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

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# Copyright

The Competency Standard for Shuttering and Scaffolding is a document for the development of curricula, teaching and learning materials, and assessment tools. It also serves as the document for providing training consistent with the requirements of industry in order for individuals who graduated through the established standard via competency-based assessment to be suitably qualified for a relevant job.

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# **List of Abbreviations**

General	
BMET	Bureau of Manpower Employment and Training
B-SEP	Bangladesh Skills for Employment and Productivity
BTEB	Bangladesh Technical Education Board
DTE	Directorate of Technical Education
ILO	International Labor Organization
ISC	Industry Skills Council
NPVC	National Pre-Vocation Certificate
NTVQF	National Technical and Vocational Qualifications Framework
PPP	Public Private Partnership
SCDC	Standards and Curriculum Development Committee
SEIP	Skills for Employment Investment Program
TVET	Technical Vocational Education and Training
UoC	Unit of Competency
Occupation Specific	
OHS	Occupational health and safety
PPE	Personal protective equipment
SOP	Standard operating procedure

#### Introduction

The Skills for Employment Investment Program (SEIP) Project of the Finance Division of the Ministry of Finance has embarked on a project which aims to qualitatively and quantitatively expand the skilling capacity of identified public and private training providers by establishing and operationalising a responsive skill ecosystem and delivery mechanism through a combination of well-defined set of funding triggers and targeted capacity support.

Among the many components of the project, one is to promote a Market Responsive Inclusive Skills Training Delivery programme. Key priority economic growth sectors identified by the government have been targeted by the project to improve current job skills along with up-skilling of the existing workforce to ensure 'required skills to industry standards'. Training providers are encouraged and supported to work with industry to address identified skills and knowledge to enable industry growth and increased employment through the provision of market responsive inclusive skills training programmes. Priority sectors were identified to adopt a demand driven approach to training with effective inputs from Industry Skills Councils (ISC's), employer associations and employers.

This document is developed to improve skills and knowledge in accordance with the job roles, duties and tasks of the occupation and ensure that the required skills and knowledge are aligned to industry requirements.

The document also details the format, sequencing, wording and layout of the Competency Standard for an occupation which is comprised of Units of Competence and its corresponding Elements.

#### Overview

A **competency standard** is a written specification of the knowledge, skills and attitudes required for the performance of an occupation, trade or job corresponding to the industry standard of performance required in the workplace.

The purpose of a competency standards is to:

- provide a consistent and reliable set of components for training, recognising and assessing people's skills, and may also have optional support materials
- enable industry recognised qualifications to be awarded through direct assessment of workplace competencies
- encourage the development and delivery of flexible training which suits individual and industry requirements
- encourage learning and assessment in a work-related environment which leads to verifiable workplace outcomes

Competency standards are developed by a working group comprised of national and international subjectmatter experts, SEIP, BTEB, ISC, and industry experts to identify the competencies required of an occupation in a particular sector.

Competency standards describe the skills, knowledge and attitude needed to perform effectively in the workplace. Competency standards acknowledge that people can achieve technical and vocational competency in many ways by emphasising what the learner can do, not how or where they learned to do it.

With competency standards, training and assessment may be conducted at the workplace or at training institute or any combination of these.

Competency standards consist of a number of units of competency. A unit of competency describes a distinct work activity that would normally be undertaken by one person in accordance with industry standards.

Units of competency are documented in a standard format that comprises of:

- unit title
- nominal duration
- unit code
- unit descriptor
- elements and performance criteria
- variables and range statement
- curricular content guide
- assessment evidence guide

Together, all the parts of a unit of competency:

- describe a work activity
- guide the assessor to determine whether the candidate is competent or not yet competent

# **Approval Sheet**

Identification and validation of units of competency and elements for this occupation were made by experts within this sector. A series of meetings were held to accurately capture industry and employer needs and expectations, and develop the competency framework that would help to enhance the employability of the youth trained. This process started on 25 September 2018 and concluded with a validation workshop with working group on 31 October 2018.

# **Experts Involved**

Industry and subject-matter experts who provided their valuable inputs to develop this competency standard [September – October 2018]:

Name	Organisation	Designation
Md. Reajul Islam	Bashundhara Training and Testing Centre	Instructor
Abu Yousuf	Skills Development Institute	Trainer
Md. Saiful Alam	Montage Training and Certification	Instructor
Md. Monirul Islam	National Development Engineers	Assessor
Md. Abu Kouser Shakib	Achieve Corporation (Pvt) Limited	Assessor
Md. Ziaur Rahman	Modern Engineers and Architects Limited	Engineer
Md. Sayedur Rahman	British Council - SD03	National Subject Matter Consultant - Construction Sector

# **Development and Validation Workshop**

Working group formation and competency standard development and validation workshop participants [held on 31 October 2018]:

Name	Organisation	Designation
Md. Reajul Islam	Bashundhara Training and Testing Centre	Instructor
Abu Yousuf	Skills Development Institute	Trainer
Md. Saiful Alam	Montage Training and Certification	Instructor
Md. Monirul Islam	National Development Engineers	Assessor
Md. Abu Kouser Shakib	Achieve Corporation (Pvt) Limited	Assessor

Name	Organisation	Designation	
Bimal Chandra Das	UVTCL	Senior Chief Instructor	
Engr. B.M. Mofizur Rahman	CISC	Curriculum Development and Training Executive	
S.M. Shahjahan	ВТЕВ	Deputy Director	
Md. Abdur Razzaque	SEIP-BTEB	Specialist-1 (Competency Standards)	
Syed Nasir Ershad	SEIP	AEPD (Public 1)	
Mr. Md. Ahsan Habib	SEIP	TVET Specialist	
Mr. Mohiuzzaman	SEIP	Course Specialist	
David King	British Council - SD03	Team Leader	
Mr. Sayedur Rahman	British Council - SD03	National Subject Matter Consultant - Construction Sector	

The ensuing sections of this document comprise of a description of the relevant occupation, trade or job with all the key components of a unit of competency, including:

- a chart with an overview of all Units of Competency for the relevant occupation, trade or job including the Unit Codes and the Unit of Competency titles and corresponding Elements
- the Competency Standard that includes the Unit of Competency, Unit Descriptor, Elements and Performance Criteria, Range of Variables, Curricular Content Guide and Assessment Evidence Guide

# **Committee Workshop**

The National competency standards for National Skills Certificate in Shuttering and Scaffolding, **NTVQF Level [INSERT LEVEL]** qualification is a document developed by the Skill for Employment Investment Programme (SEIP), Finance Division, Ministry of Finance. This standard has been developed by an industry expert group under guidance of SEIP. The standard was approved by the SCDC [BTEB to insert date] at NTVQF Cell, BTEB.

# Respectable members of the SCDC:

Shuttering and Scaffolding - Level [INSERT LEVEL]		

# **Course Structure**

SL	Unit Code and Title Level			Nominal Duration (Hours)
Gener	ic Competencies (3 unit	s of competency required)		
1	SEIP-CON-SS-01-G	Carry out workplace interaction		14
2	SEIP-CON-SS-02-G	Operate in a team environment		14
3	SEIP-CON-SS-03-G	Carry out calculations and measurements		16
Sub-T	otal			44
Sector	r-specific Competencies	(3 units of competency required)		
1	SEIP-CON-SS-01-S	Apply occupational health and safety (OHS) practice in the workplace		14
2	SEIP-CON-SS-02-S	Read and interpret sketches and drawings		10
3	SEIP-CON-SS-03-S	Use hand and power tools		12
Sub-Total			36	
Occup	Occupation-specific Competencies (6 units of competency required)			
1	SEIP-CON-SS-01-O	Plan and prepare for work		20
2	SEIP-CON-SS-02-O	Erect and dismantle scaffolding		70
3	SEIP-CON-SS-03-O	Install shuttering using timber		60
4	SEIP-CON-SS-04-O	Install shuttering using modular steel frame		60
5	SEIP-CON-SS-05-O	Install shuttering using aluminium and plastic		50
6	SEIP-CON-SS-06-O	Inspect, repair and store shuttering		20
Sub-Total			280	
Total Nominal Learning Hours			360	

Units of Competency
Generic Specific (Basi

# **Elements**

# ic) Competencies

Carry out workplace interaction SEIP-CON-SS-01-G

Interpret workplace communication and etiquette	Read and understand workplace documents	Participate in workplace meetings and discussions
Apply professional ethics at work		

Operate in a team environment SEIP-CON-SS-02-G

Identify team goals and work processes	Identify own role and responsibilities within team	Communicate and co-operate with team members
Perform problem solving within the team		

Carry out measurements and calculations SEIP-CON-SS-03-G

# **Sector-specific (Common) Competencies**

Apply occupational health and safety (OHS) practice in the	Identify OHS policies and procedures	Apply personal health and safety practices	Report hazards and risks
workplace SEIP-CON-SS-01-S	Respond to emergencies		
Read and interpret sketches and drawings SEIP-CON-SS-02-S	Interpret information and specifications	Read and interpret sketches and drawings	
Use hand and power tools	Identify and inspect hand and power tools	Use hand tools properly and safely	Operate power tools properly and safely
SEIP-CON-SS-03-S	Clean and maintain hand and power tools		

# **Occupation-specific (Core) Competencies**

Plan and prepare for work SEIP-CON-SS-01-O	Plan and prepare for work	Sequence work safely	Inspect ropes
Erect and dismantle scaffolding	Erect scaffolding	Inspect, repair and adjust scaffolding	Dismantle scaffolding
SEIP-CON-SS-02-O	Clean and maintain work area		
Install shuttering using timber	Plan and prepare for shuttering works	Install shuttering using timber	Inspect, repair and adjust shuttering
SEIP-CON-SS-03-O	Remove shuttering	Clean and maintain work area	
		T	
Install shuttering using modular steel frame	Plan and prepare for shuttering works	Install shuttering using modular steel frame	Strip shuttering
SEIP-CON-SS-04-O	Remove shuttering	Clean and maintain work area	
Install shuttering using aluminium and plastic SEIP-CON-SS-05-O	Plan and prepare for shuttering works	Install shuttering using aluminium and plastic	Remove shuttering
	Clean and maintain work area		

Inspect, repair and store shuttering SEIP-CON-SS-06-O

Inspect shuttering	Repair shuttering	Store shuttering

# **Units and Elements Table**

# **Generic – Compulsory (3 units of competency required)**

Code	Unit of Competency	Elements of Competency	Duration (hours)
SEIP-CON-SS-01-G	Carry out workplace interaction	<ol> <li>Interpret workplace communication and etiquette.</li> <li>Read and understand workplace documents.</li> <li>Participate in workplace meetings and discussions.</li> </ol>	14
		4. Apply professional ethics at work.	
SEIP-CON-SS-02-G	Operate in a team environment	<ol> <li>Identify team goals and work processes.</li> <li>Identify own role and responsibilities within team.</li> </ol>	14
		<ul><li>3. Communicate and co-operate with team members.</li><li>4. Perform problem solving within the team.</li></ul>	
SEIP-CON-SS-03-G	Carry out calculations and measurements	<ol> <li>Plan and prepare.</li> <li>Obtain measurements.</li> <li>Perform calculations.</li> </ol>	16
Total Hours			44

# Sector-specific – Compulsory (3 units of competency required)

Code	Unit of Competency	Elements of Competency	Duration (hours)
SEIP-CON-SS-01-S	Apply occupational health and safety (OHS) practice in the workplace	<ol> <li>Identify OHS policies and procedures.</li> <li>Apply personal health and safety Practices.</li> <li>Report hazards and risks.</li> <li>Respond to emergencies.</li> </ol>	14
SEIP-CON-SS-02-S	Read and interpret sketches and drawings	<ol> <li>Interpret information and specifications.</li> <li>Read and interpret sketches and drawings.</li> </ol>	10
SEIP-CON-SS-03-S	Use hand and power tools	<ol> <li>Identify and inspect hand and power tools.</li> <li>Use hand tools properly and safely.</li> <li>Operate power tools properly and safely.</li> <li>Clean and maintain hand and power tools.</li> </ol>	12
Total Hours			36

# Occupation-specific – Compulsory (6 units of competency required)

Code	Unit of Competency	Elements of Competency	Duration (hours)
SEIP-CON-SS-01-O	Plan and prepare for work	<ol> <li>Plan and prepare for work.</li> <li>Sequence work safely.</li> <li>Inspect ropes.</li> </ol>	20
SEIP-CON-SS-02-O	Erect and dismantle scaffolding	<ol> <li>Erect scaffolding.</li> <li>Inspect, repair and adjust erected scaffolding.</li> <li>Dismantle scaffolding.</li> <li>Clean and maintain work area.</li> </ol>	70
SEIP-CON-SS-03-O	Install shuttering using timber	<ol> <li>Plan and prepare for shuttering works.</li> <li>Install shuttering using timber.</li> <li>Inspect, repair and adjust installed shuttering.</li> <li>Remove shuttering.</li> <li>Clean and maintain work area.</li> </ol>	60
SEIP-CON-SS-04-O	Install shuttering using modular steel frame	<ol> <li>Plan and prepare for shuttering works.</li> <li>Install shuttering using modular steel frame.</li> <li>Strip shuttering.</li> <li>Remove shuttering.</li> <li>Clean and maintain work area.</li> </ol>	60
SEIP-CON-SS-05-O	Install shuttering using aluminium and plastic	<ol> <li>Plan and prepare for shuttering works.</li> <li>Install shuttering using aluminium and plastic.</li> <li>Remove shuttering.</li> <li>Clean and maintain work area.</li> </ol>	50
SEIP-CON-SS-06-O	Inspect, repair and store shuttering	<ol> <li>Inspect shuttering.</li> <li>Repair shuttering.</li> <li>Store shuttering.</li> </ol>	20
Total Hours			280

# **Generic Competencies**

Unit Title:	Carry out workplace interaction	
Unit Code:	SEIP-CON-SS-01-G	
Nominal Hours:	14 hours	
Unit Descriptor:	This unit covers the skills, knowledge and attitudes required to carry out workplace interaction. It specifically includes workplace communication, etiquette, understanding workplace documents, workplace meetings and discussions, and professional ethics at work.	
Elements of Competency	Performance Criteria (bold and underlined terms are elaborated in the Range of Variables)	
Interpret workplace communication and etiquette	<ol> <li>1.1. Workplace codes of conduct are interpreted as per organisational guidelines.</li> <li>1.2. Appropriate lines of communication are maintained with supervisors and colleagues.</li> <li>1.3. Workplace interactions are conducted in a courteous manner to gather and convey information.</li> <li>1.4. Workplace procedures and matters are comprehended.</li> </ol>	
Read and understand workplace documents	<ul> <li>2.1. Workplace documents are interpreted correctly.</li> <li>2.2. Visual information/symbols/signage are understood correctly and followed.</li> <li>2.3. Specific and relevant information are accessed from appropriate sources.</li> <li>2.4. Appropriate medium is used to transfer information and ideas.</li> </ul>	
3. Participate in workplace meetings and discussions	<ul> <li>3.1. Team meetings are attended on time.</li> <li>3.2. Meeting procedures and etiquette are followed.</li> <li>3.3. Active participation is ensured, opinions are expressed and heard.</li> <li>3.4. Inputs are provided and interpreted in line with the meeting purpose.</li> </ul>	
Practice professional ethics at work	<ul> <li>4.1. Responsibilities as a team member are performed.</li> <li>4.2. Tasks are performed in accordance with workplace procedures.</li> <li>4.3. Confidentiality is maintained.</li> <li>4.4. Inappropriate and conflicting situations are avoided.</li> </ul>	

Range of Variables		
Variable	Range (may include but not limited to)	
1. Courteous manner	<ul><li>1.1. Effective questioning</li><li>1.2. Active listening</li><li>1.3. Speaking skills</li><li>1.4. Writing skill</li><li>1.5. Email etiquette</li></ul>	
Workplace procedures and matters	<ul> <li>2.1. Notes</li> <li>2.2. Arranging a meeting</li> <li>2.3. Agenda</li> <li>2.4. Simple reports such as progress and incident reports</li> <li>2.5. Job sheets</li> <li>2.6. Operational manuals</li> <li>2.7. Brochures and promotional material</li> <li>2.8. Visual and graphic materials</li> <li>2.9. Standards</li> <li>2.10. OHS information</li> <li>2.11. Signs</li> </ul>	
3. Appropriate sources	<ul><li>3.1. Human Resources (HR) Department</li><li>3.2. Managers</li><li>3.3. Supervisors</li><li>3.4. Management Information System (MIS)</li></ul>	

Evidence Guide The evidence must be authentic, va current version of the Unit of Compe	lid, sufficient, reliable, consistent and recent and meet the requirements of the etency.	
Critical aspects of competency	Assessment must evidence that the candidate:  1.1. Interpreted workplace communication and etiquette  1.2. Interpreted workplace instructions and symbols  1.3. Performed active participation in workplace meetings	
2. Underpinning knowledge	<ul><li>2.1. Workplace communication and etiquette</li><li>2.2. Workplace documents, signs and symbols</li><li>2.3. Meeting procedure and etiquette</li><li>2.4. Professional ethics</li></ul>	
3. Underpinning skills	<ul> <li>3.1. Demonstrating workplace communication and etiquette</li> <li>3.2. Interpreting workplace instructions and symbols</li> <li>3.3. Demonstrating active participation in workplace meeting</li> <li>3.4. Applying professional ethics at work</li> </ul>	

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The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet the requirements of the current version of the Unit of Competency.

4. Underpinning attitudes	<ul> <li>4.1. Prompt in carrying out activities</li> <li>4.2. Tidy and punctual</li> <li>4.3. Respectful of peers, subordinates and seniors in the workplace</li> <li>4.4. Concerned about the work environment</li> <li>4.5. Sincere and honest concerning duties</li> </ul>
5. Resource implications	The following resources must be provided:  5.1. Workplace (simulated or actual)  5.2. Workplace procedures  5.3. Standard operating procedure  5.4. Workplace documents, signs and symbols  5.5. Codes of conduct  5.6. Projector  5.7. Stationary  5.8. Learning manual
6. Methods of assessment	Methods of assessment may include but is not limited to: 6.1. Written test 6.2. Demonstration 6.3. Oral test 6.4. Observation 6.5. Portfolio
7. Context of assessment	<ul><li>7.1. Competency assessment must be done in a training institute or an actual or simulated workplace after completion of this unit of competency.</li><li>7.2. Assessment must be done by a suitably qualified/certified assessor.</li></ul>

# **Accreditation Requirements**

Training Providers must be accredited by Bangladesh Technical Education Board (BTEB), the National Quality Assurance Body, or a body with delegated authority for quality assurance to conduct training and assessment against this unit of competency for credit towards the award of any NTVQF qualification. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by BTEB.

Unit Title:	Operate in a team environment	
Unit Code:	SEIP-CON-SS-02-G	
Nominal Hours:	14 hours	
Unit Descriptor:	This unit covers the skills, knowledge and attitudes required to operate in a team environment. It specifically includes team goals and work processes, roles and responsibilities, team communication and problem solving within the team.	
Elements of Competency	Performance Criteria (bold and underlined terms are elaborated in the Range of Variables)	
Identify team goals and work processes	<ul><li>1.1. Roles and objectives of the team are identified and interpreted.</li><li>1.2. Roles and responsibilities of team members are identified and interpreted.</li></ul>	
Identify own role and responsibilities within team	<ul><li>2.1. Personal role and responsibilities are identified within the team environment.</li><li>2.2. Reporting relationships are interpreted within team and external to team.</li></ul>	
Communicate and co-operate with team members	<ul> <li>3.1. Other teammates' tasks are identified and support provided when requested.</li> <li>3.2. The team is encouraged through sharing information or expertise, working together to solve problems, and putting team success first.</li> <li>3.3. Views and opinions of other team members are interpreted and respected.</li> </ul>	
4. Practice problem solving within the team	<ul> <li>4.1. Problems faced at the individual and team level are identified and showed insight into the root-causes of the problems.</li> <li>4.2. A range of solutions and courses of action are identified together with benefits, costs, and risks associated with each.</li> <li>4.3. The good ideas of others to help develop solutions are recognised and advice sought from those who have solved similar problems.</li> <li>4.4. It is looked beyond the obvious and not stopped at the first answers.</li> </ul>	

Range of Variables		
Variable	Range (may include but not limited to)	
1. Sharing information	<ul> <li>1.1. Agenda</li> <li>1.2. Minutes</li> <li>1.3. Progress and incident reports</li> <li>1.4. Operational manuals</li> <li>1.5. Visual and graphic materials</li> <li>1.6. Emails and SMS</li> <li>1.7. Phone directory</li> <li>1.8. Policy, procedure and standards</li> <li>1.9. OHS information</li> </ul>	

Evidence Guide  The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet the requirements of the current version of the Unit of Competency.		
Underpinning knowledge	<ul><li>1.1. Team goals and work processes</li><li>1.2. Roles and responsibilities</li><li>1.3. Finding problems and solving them</li></ul>	
2. Underpinning skills	<ul><li>2.1. Identifying own role and responsibilities within team</li><li>2.2. Communicating and co-operating with team members</li><li>2.3. Demonstrating problem solving within the team</li></ul>	
3. Underpinning attitudes	<ul> <li>3.1. Active on teamwork</li> <li>3.2. Prompt in carrying out activities</li> <li>3.3. Tidy and punctual</li> <li>3.4. Respectful of peers, subordinates and seniors in the workplace</li> <li>3.5. Sincere and honest concerning duties</li> </ul>	
4. Underpinning knowledge	<ul><li>4.1. Team goals and work processes</li><li>4.2. Roles and responsibilities</li><li>4.3. Finding problems and solving them</li></ul>	
5. Resource implications	The following resources must be provided:  5.1. Workplace (simulated or actual)  5.2. Projector  5.3. Stationary  5.4. Learning manual	

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The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet the requirements of the current version of the Unit of Competency.

6. Methods of assessment	Methods of assessment may include but is not limited to: 6.1. Written test 6.2. Demonstration 6.3. Oral test 6.4. Observation 6.5. Portfolio
7. Context of assessment	<ul><li>7.1. Competency assessment must be done in a training institute or an actual or simulated workplace after completion of this unit of competency.</li><li>7.2. Assessment must be done by a suitably qualified/certified assessor.</li></ul>

#### **Accreditation Requirements**

Training Providers must be accredited by Bangladesh Technical Education Board (BTEB), the National Quality Assurance Body, or a body with delegated authority for quality assurance to conduct training and assessment against this unit of competency for credit towards the award of any NTVQF qualification. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by BTEB.

Unit Title:	Carry out measurements and calculations		
Unit Code:	SEIP-CON-SS-03-G		
Nominal Hours:	16 hours		
Unit Descriptor:	This unit covers the skills, knowledge and attitudes required for carry out measurements and calculations in the workplace. It specifically includes planning and preparing to take measurements, obtaining measurements, and performing calculations.		
Elements of Competency	Performance Criteria (bold and underlined terms are elaborated in the Range of Variables)		
1. Plan and prepare	<ol> <li>1.1. Work instructions are confirmed and applied to the job in hand.</li> <li>1.2. Materials to be measured are identified as per job specification.</li> <li>1.3. Appropriate measuring device is identified and selected based on materials to be measured.</li> <li>1.4. Specifications are obtained and verified from relevant documents.</li> </ol>		
2. Obtain measurements	<ul> <li>2.1. Method of obtaining measurement is selected and applied.</li> <li>2.2. Measurements are obtained using appropriate device in accordance with job requirement.</li> <li>2.3. Measurements, including areas and volume, are confirmed and applied.</li> </ul>		
3. Perform calculations	<ul> <li>3.1. <u>Calculations</u>, using basic operations, for determining material requirement are taken.</li> <li>3.2. Appropriate <u>formulas</u> for calculating quantities are selected.</li> <li>3.3. Quantities are estimated from the calculations taken.</li> <li>3.4. Material quantities are calculated, confirmed and recorded within tolerances.</li> </ul>		

Range of Variables		
Variable	Range (may include but not limited to)	
Measuring device	<ul><li>1.1. Measuring tape</li><li>1.2. Steel rule</li><li>1.3. Calculator</li><li>1.4. Sets square</li></ul>	

Range of Variables		
Variable	Range (may include but not limited to)	
2. Documents	<ul><li>2.1. Technical manuals</li><li>2.2. Specifications</li><li>2.3. Sketches</li><li>2.4. Drawings</li><li>2.5. Charts</li><li>2.6. Photographs</li></ul>	
3. Measurements	<ul><li>3.1. Length</li><li>3.2. Width</li><li>3.3. Weight</li><li>3.4. Tolerance</li></ul>	
4. Calculations	<ul> <li>4.1. Addition</li> <li>4.2. Subtraction</li> <li>4.3. Multiplication</li> <li>4.4. Division</li> <li>4.5. Area</li> <li>4.6. Volume</li> <li>4.7. Circumference</li> <li>4.8. CBM</li> <li>4.9. Volumetric weight</li> </ul>	
5. Formulas	<ul><li>5.1. Fractions</li><li>5.2. Percentages</li><li>5.3. Mixed numbers</li><li>5.4. Conversions</li><li>5.5. Scales</li></ul>	

# **Evidence Guide**

The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet the requirements of the current version of the Unit of Competency.

current version of the Unit of Competency.		
Critical aspects of competency	Assessment required evidence that the candidate:  1.1. Identified and selected appropriate measuring devices	
	Carried out measurements for apparel	
	1.3. Identified and selected correct mathematical formula	
	1.4. Performed calculations as per job requirement	

Evidence Guide	
	alid, sufficient, reliable, consistent and recent and meet the requirements of the etency.
2. Underpinning knowledge	<ul> <li>2.1. Measuring devices</li> <li>2.2. Basic mathematical formulas</li> <li>2.3. Simple calculation techniques</li> <li>2.4. Garment allowances and tolerances</li> <li>2.5. Recording data procedures</li> </ul>
3. Underpinning skills	<ul><li>3.1. Identifying appropriate measuring devices</li><li>3.2. Carrying out measurements for apparel</li><li>3.3. Performing calculations as per job requirement</li></ul>
4. Underpinning attitudes	<ul> <li>4.1. Committed to occupational health and safety practices</li> <li>4.2. Communicates well with peers, subordinates and seniors in workplace</li> <li>4.3. Prompt in carrying out activities</li> <li>4.4. Tidy and punctual</li> <li>4.5. Sincere and honest concerning duties</li> </ul>
5. Resource implications	The following resources must be provided:  5.1. Workplace (simulated or actual)  5.2. Computer/laptop/notebook  5.3. Calculator  5.4. Measuring tape  5.5. Projector  5.6. Stationary  5.7. Learning manual
6. Methods of assessment	Methods of assessment may include but is not limited to: 6.1. Written test 6.2. Oral test 6.3. Observation 6.4. Demonstration 6.5. Portfolio
7. Context of assessment	<b>7.1.</b> Competency assessment must be done in a training institute or an actual or simulated workplace after completion of this unit of competency.

# **Accreditation Requirements**

Training Providers must be accredited by Bangladesh Technical Education Board (BTEB), the National Quality Assurance Body, or a body with delegated authority for quality assurance to conduct training and assessment against this unit of competency for credit towards the award of any NTVQF qualification. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by BTEB.

assessor.

7.2. Assessment must be done by a suitably qualified/certified

Unit Title:	Apply occupational health and safety (OHS) practice in the workplace			
Unit Code:	SEIP-CON-SS-01-S			
Nominal Hours:	14 hours			
Unit Descriptor:	This unit covers the skills, knowledge and attitudes required to apply occupational health and safety (OHS) practices in the workplace. It specifically includes identifying OHS policies and procedures, applying personal health and safety practices, reporting hazards and risks, and responding to emergencies.			
Elements of Competency	Performance Criteria (bold and underlined terms are elaborated in the Range of Variables)			
Identify OHS policies and procedures	<ul> <li>1.1. OHS policies and safe operating procedures are interpreted.</li> <li>1.2. Safety signs and symbols are identified and followed.</li> <li>1.3. Response, evacuation procedures and other contingency measures are interpreted correctly.</li> </ul>			
Apply personal health and safety practices	<ul> <li>2.1. OHS policies and procedures are applied in the workplace including personal protective equipment (PPE).</li> <li>2.2. Common health issues are recognised.</li> <li>2.3. Common safety issues are identified.</li> </ul>			
3. Report hazards and risks	<ul><li>3.1. Hazards and risks are identified.</li><li>3.2. Hazards and risks assessment and controls are interpreted.</li></ul>			
4. Respond to emergencies	<ul> <li>4.1. Respond to alarms and warning devices.</li> <li>4.2. Emergency response plans and procedures are responded to.</li> <li>4.3. First aid procedures during emergency situations are identified.</li> </ul>			

Range of Variables		
Variable	Range (may include but not limited to)	
1. OHS policies	<ul><li>1.1. Organisational OHS polices</li><li>1.2. International OHS requirements</li><li>1.3. Fire safety rules and regulations</li></ul>	
Emergency response plans and procedures	<ul><li>2.1. Firefighting procedures</li><li>2.2. Earthquake response procedures</li><li>2.3. Emergency response plans and procedures</li><li>2.4. Medical and first aid</li></ul>	

Range of Variables		
Variable	Range (may include but not limited to)	
3. First aid procedure	<ul><li>3.1. Washing of open wound</li><li>3.2. Washing chemically infected area</li><li>3.3. Applying bandage</li><li>3.4. Taking appropriate medicine</li></ul>	
Personal protective equipment	<ul> <li>4.1. Safety glasses</li> <li>4.2. Ear plugs</li> <li>4.3. Gloves</li> <li>4.4. Apron</li> <li>4.5. Helmet</li> <li>4.6. Mask</li> <li>4.7. Safety shoes</li> </ul>	

Evidence Guide  The evidence must be authentic, vacurrent version of the Unit of Composition	alid, sufficient, reliable, consistent and recent and meet the requirements of the etency.
Critical aspects of competency	Assessment must evidence that the candidate:  1.1. Identified OHS policies and procedures  1.2. Applied personal health and safety practices (including PPE)  1.3. Reported hazards and risks  1.4. Responded to emergencies
2. Underpinning knowledge	<ul> <li>2.1. Workplace OHS policies and procedures</li> <li>2.2. Work safety procedures</li> <li>2.3. Emergency response procedures: <ul> <li>2.3.1. Firefighting</li> <li>2.3.2. Earthquake response</li> <li>2.3.3. Accident response</li> </ul> </li> <li>2.4. Types of hazards (biological, chemical and physical) and their effects</li> <li>2.5. OHS awareness</li> <li>2.6. Personal protective equipment (PPE)</li> </ul>
3. Underpinning skills	<ul><li>3.1. Identifying OHS policies and procedures</li><li>3.2. Applying personal health and safety practices</li><li>3.3. Reporting hazards and risks</li><li>3.4. Responding to emergencies</li></ul>

#### **Evidence Guide**

The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet the requirements of the current version of the Unit of Competency.

current version of the office of competency.				
4. Underpinning attitudes	<ul> <li>4.1. Committed to occupational health and safety practices</li> <li>4.2. Communicates well with peers, subordinates and seniors in workplace</li> <li>4.3. Prompt in carrying out activities</li> <li>4.4. Tidy and punctual</li> <li>4.5. Sincere and honest concerning duties</li> <li>4.6. Responsible during emergencies</li> </ul>			
5. Resource implications	The following resources must be provided: 5.1. Workplace (simulated or actual) 5.2. Personal protective equipment (PPE) 5.3. Firefighting equipment 5.4. Emergency response manual 5.5. First aid kits 5.6. Stationary 5.7. Learning manual			
6. Methods of assessment	Methods of assessment may include but is not limited to: 6.1. Written test 6.2. Demonstration 6.3. Oral test 6.4. Observation 6.5. Portfolio			
7. Context of assessment	<b>7.1.</b> Competency assessment must be done in a training institute or an actual or simulated workplace after completion of this unit of competency.			

#### **Accreditation Requirements**

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assessor.

7.2. Assessment must be done by a suitably qualified/certified

Unit Title:	Read and interpret sketches and drawings		
Unit Code:	SEIP-CON-SS-02-S		
Nominal Hours:	10 hours		
Unit Descriptor:	This unit covers the skills, knowledge and attitudes required to read and interpret sketches and drawings. It specifically includes interpreting information and specifications, and reading and interpreting sketches and drawings.		
Elements of Competency	Performance Criteria (bold and underlined terms are elaborated in the Range of Variables)		
Interpret information and specifications	<ul> <li>1.1. Appropriate manuals for work activity are identified and collected.</li> <li>1.2. Information and specifications in the manuals are interpreted and applied.</li> </ul>		
Read and interpret sketches and drawings	<ol> <li>Relevant sketches and drawings are identified for job requirement.</li> <li>Key terms and abbreviations are identified and interpreted.</li> <li>Signs and symbols are identified and interpreted.</li> <li>Schedules, dimensions, sketches, drawings and specifications are correctly read and interpreted.</li> </ol>		

Range of Variables				
Variable	Range (may include but not limited to)			
1. Manuals	<ul> <li>1.1. Buyers specification</li> <li>1.2. Compliance</li> <li>1.3. Maintenance procedure</li> <li>1.4. Periodic maintenance</li> <li>1.5. Quality assurance</li> <li>1.6. Standard operating procedure (SOP)</li> </ul>			
2. Sketches and drawings	<ul><li>2.1. Technical</li><li>2.2. Measurement</li><li>2.3. Design</li></ul>			
3. Specifications	<ul><li>3.1. Product</li><li>3.2. Performance</li><li>3.3. Method</li></ul>			
4. Terms and abbreviations	<b>4.1.</b> Refers to all terms and abbreviations associated with the Construction Sector			
5. Signs and symbols	<b>5.1.</b> Includes all signs and symbols associated with the Construction Sector			

<b>Evidence Guide</b> The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet the requirements of the current version of the Unit of Competency.				
Critical aspects of competency	Assessment must evidence that the candidate:  1.1. Identified information and specifications  1.2. Read and interpreted sketches and drawings			
2. Underpinning knowledge	<ul><li>2.1. Manuals</li><li>2.2. Units of measurement</li><li>2.3. Units of conversion</li><li>2.4. Sketch, drawings and specifications</li></ul>			
3. Underpinning skills	<ul><li>3.1. Reading and identifying information and specifications (from manual)</li><li>3.2. Reading and interpreting sketches and drawings</li></ul>			
4. Underpinning attitudes	<ul> <li>4.1. Prompt in carrying out activities</li> <li>4.2. Tidy and punctual</li> <li>4.3. Eager to learn</li> <li>4.4. Active on teamwork</li> <li>4.5. Sincere and honest concerning duties</li> <li>4.6. Eager to learn</li> <li>4.7. Concerned about proper use of computer and peripherals</li> </ul>			
5. Resource implications	The following resources must be provided:  5.1. Workplace (simulated or actual)  5.2. Computer/laptop/notebook  5.3. Software  5.4. Sketches and drawings  5.5. Manuals and specifications  5.6. Projector  5.7. Stationary  5.8. Learning manual			
6. Methods of assessment	Methods of assessment may include but is not limited to: 6.1. Written test 6.2. Oral test 6.3. Observation 6.4. Demonstration 6.5. Portfolio			
7. Context of assessment	<ul><li>7.1. Competency assessment must be done in a training institute or an actual or simulated workplace after completion of this unit of competency.</li><li>7.2. Assessment must be done by a suitably qualified/certified assessor.</li></ul>			

#### **Evidence Guide**

The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet the requirements of the current version of the Unit of Competency.

# **Accreditation Requirements**

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Unit Title:	Use hand and power tools		
Unit Code:	SEIP-CON-SS-03-S		
Nominal Hours:	12 hours		
Unit Descriptor:	This unit covers the skills, knowledge and attitudes required to use hand and power tools in the workplace. It specifically includes identifying and inspecting hand and power tools for usability, using and operating tools properly and safely, and cleaning and maintaining hand and power tools after use.		
Elements of Competency	Performance Criteria (bold and underlined terms are elaborated in the Range of Variables)		
Identify and inspect hand and power tools	<ul><li>1.1. Appropriate hand and power tools are identified.</li><li>1.2. Application of hand and power tools is recognised.</li><li>1.3. Usability of hand and power tools is checked and verified.</li></ul>		
Use hand tools properly and safely	<ol> <li>2.1. Appropriate <u>hand tools</u> are selected.</li> <li>2.2. Safety precautions are ensured before using hand tools.</li> <li>2.3. Unsafe or faulty hand tools are identified and marked for repair.</li> <li>2.4. <u>Measuring tools</u> are checked and calibrated before use.</li> <li>2.5. Use hand tools properly and safely to perform work activity.</li> </ol>		
3. Operate power tools properly and safely	<ul> <li>3.1. Appropriate power tools are selected.</li> <li>3.2. Power supply outlet and electrical cord are inspected and confirmed safe for use in accordance with established workplace safety requirements.</li> <li>3.3. Safety precautions are ensured before using power tools in accordance with manufacturer's operating specification.</li> <li>3.4. Proper sequence of operation applied for using power tools.</li> <li>3.5. Unsafe or faulty power tools are identified and marked for repair.</li> <li>3.6. Operate power tools properly and safely to perform work activity.</li> </ul>		
Clean and maintain hand and power tools	<ul> <li>4.1. Dust and foreign matter are removed from hand and power tools in accordance to workplace standards.</li> <li>4.2. Condition of hand and power tools is checked after use and reported.</li> <li>4.3. Appropriate lubricant is applied after use and prior to storage.</li> <li>4.4. Measuring tools are checked and calibrated after use.</li> <li>4.5. Defective hand and power tools are inspected and repaired or replaced.</li> <li>4.6. Hand and power tools are stored and secured in accordance with workplace requirements.</li> </ul>		

Range of Variables				
Variable	Range (may include but not limited to)			
1. Hand tools	<ul> <li>1.1. Hacksaw</li> <li>1.2. Hammer</li> <li>1.3. Files</li> <li>1.4. Pliers</li> <li>1.5. Punches</li> <li>1.6. Screwdrivers</li> <li>1.7. Wrench box</li> <li>1.8. Hand tap</li> <li>1.9. Wire cutters</li> <li>1.10. Hand hacksaw</li> <li>1.11. Drill</li> <li>1.12. Grinder</li> <li>1.13. Dial gauge</li> <li>1.14. Spanner comb</li> <li>1.15. Spanner ring</li> <li>1.16. Socket ratchet set</li> <li>1.17. Easy opener</li> <li>1.18. Top roller adjust gauge</li> <li>1.19. Allen key</li> <li>1.20. Top roller adjust gauge</li> </ul>			
2. Power tools	<ul> <li>2.1. Portable drilling machine</li> <li>2.2. Threading machine</li> <li>2.3. Saws</li> <li>2.4. Glue gun</li> <li>2.5. Soldering iron</li> <li>2.6. Grinders</li> </ul>			
3. Measuring tools	<ul><li>3.1. Measuring tape</li><li>3.2. Steel tape</li><li>3.3. Techo Meter</li><li>3.4. Slide callipers</li></ul>			

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The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet the requirements of the current version of the Unit of Competency.

Critical aspects of	Assessment must evidence that the candidate:
competency	Identified and selected appropriate hand and power tools for work to be performed
	Identified and used measuring and testing tools appropriate to work activity
	Followed safety precautions when using hand and power tools
	<b>1.4.</b> Operated power tools safely and pursuant to manufacturer's operating specification
	1.5. Performed cleaning and maintenance of hand and power tools after use and prior to storing
2. Underpinning knowledge	2.1. Information on types of hand and power tools, their functions and use
	2.2. Procedures for safely using hand and power tools
3. Underpinning skills	3.1. Identifying hand, power and measuring tools
	<b>3.2.</b> Following safety precautions when using hand, power and measuring tools
	3.3. Using hand and measuring tools correctly and safely in accordance with manufacturer's operating specification
	<b>3.4.</b> Operating power tools correctly and safely in accordance with manufacturer's operating specification
	3.5. Cleaning and maintaining hand and power tools after use
	<b>3.6.</b> Applying appropriate lubricant on hand and power tools after use and prior to storing
4. Underpinning attitudes	4.1. Commitment to occupational health and safety
	4.2. Promptness in carrying out activities
	4.3. Sincere and honest to duties
	4.4. Environmental concerns
	4.5. Tidiness and timeliness
	<b>4.6.</b> Concerned for proper use of tools
5. Resource implications	The following resources must be provided:
	5.1. Workplace (simulated or actual)
	5.2. Hand tools
	5.3. Power tools
	5.4. Measuring tools
	5.5. Projector
	5.6. Stationary
	5.7. Learning manual

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The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet the requirements of the current version of the Unit of Competency.

6. Methods of assessment	Methods of assessment may include but is not limited to: 6.1. Written test 6.2. Oral test 6.3. Observation 6.4. Demonstration 6.5. Portfolio
7. Context of assessment	<ul><li>7.1. Competency assessment must be done in a training institute or an actual or simulated workplace after completion of this unit of competency.</li><li>7.2. Assessment must be done by a suitably qualified/certified</li></ul>
	assessor.

#### **Accreditation Requirements**

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# **Occupation-specific Competencies**

Unit Title:	Plan and prepare for work		
Unit Code:	SEIP-CON-SS-01-O		
Nominal Hours:	20 hours		
Unit Descriptor:	This unit covers the skills, knowledge and attitudes required to plan and prepare for work. It specifically includes planning and preparing for work, sequencing work safely and inspecting ropes.		
Elements of Competency	Performance Criteria (bold and underlined terms are elaborated in the Range of Variables)		
Plan and prepare for work	<b>1.1.</b> Work requirements, including plans and specifications, are identified and correctly interpreted.		
	1.2. Job instructions are read and clarified where needed.		
	1.3. Work area is inspected and prepared as per job requirement.		
	<b>1.4.</b> Signage and barricade requirements are identified and employed.		
	<ol> <li>Appropriate personal protective equipment (PPE) is identified and selected.</li> </ol>		
	<b>1.6.</b> Tools and equipment are identified, checked for serviceability and selected.		
	1.7. <u>Materials</u> are identified and selected as per job requirement.		
2. Sequence work safely	<b>2.1.</b> Job requirement is reviewed to ensure that tasks are performed timely, safe and efficient manner.		
	2.2. Compliance documentation is completed and submitted to appropriate authority.		
3. Inspect ropes	3.1. Whipping cord and fibre ropes are inspected for damage and wear and tear.		
	<b>3.2.</b> Designated rope ends are whipped and spliced as per standard operating procedure.		
	<b>3.3.</b> Bends and hitches are inspected and applied as per job requirement.		

Range of Variables		
Variable	Range (may include but not limited to)	
1. Work requirements	1.1. Site inspection	
	1.2. Equipment defect identification	
	1.3. Hazard and risk assessment	
	1.4. Erection of scaffolding	
	1.5. Provision of work platforms	
	1.6. Lifting devices	
	1.7. Footings	
	1.8. Whipping and splicing	
	1.9. Bends and hitches	
	<b>1.10</b> . Tying	
2. Tools and equipment	2.1. Ropes and ties	
	2.2. Adjustable base plates	
	2.3. Bends and hitches	
	2.4. Box spanners	
	2.5. Braces	
	2.6. Bracket scaffolds	
	2.7. Cantilevered hoists	
	2.8. Couplers	
	2.9. Guard rails	
	2.10. Mid rails	
	2.11. Scaffold belts	
	2.12. Scaffold planks	
	2.13. Ladders	
	2.14. Steel/aluminium tubes	
	2.15. Spirit level	
	2.16. Torpedo level	
	2.17. Wire nips	
	2.18. Safety net	
	2.19. Static line	
3. Materials	3.1. Scaffolding	
	3.2. Shuttering	

Evidence Guide	_		_	

Critical aspects of competency	Assessment must evidence that the candidate:  1.1. Planned and prepared for work  1.2. Identified work requirements  1.3. Interpreted job instructions  1.4. Checked tools and equipment for serviceability  1.5. Identified required materials  1.6. Sequenced work safely  1.7. Inspected ropes  1.8. Whipped and spliced rope ends
2. Underpinning knowledge	<ul> <li>2.1. Work planning and preparation</li> <li>2.2. Personal protective equipment (PPE)</li> <li>2.3. Tools and equipment</li> <li>2.4. Work processes</li> <li>2.5. Scaffolding</li> <li>2.6. Shuttering</li> <li>2.7. Standard operating procedure</li> </ul>
3. Underpinning skills	<ul> <li>3.1. Planning and preparing for work</li> <li>3.2. Identifying appropriate signage and barricades</li> <li>3.3. Checking tools and equipment</li> <li>3.4. Selecting correct materials</li> <li>3.5. Sequencing work safely</li> <li>3.6. Inspecting ropes</li> <li>3.7. Whipping and splice rope ends</li> </ul>
4. Underpinning attitudes	<ul> <li>4.1. Tidy and punctual</li> <li>4.2. Prompt in carrying out activities</li> <li>4.3. Sincere and honest concerning duties</li> <li>4.4. Active on teamwork</li> <li>4.5. Eager to learn</li> <li>4.6. Concerned for proper use of tools</li> <li>4.7. Committed to occupational health and safety practices</li> <li>4.8. Respectful of peers, subordinates and seniors in the workplace</li> <li>4.9. Communicate with peers and seniors in the workplace</li> </ul>

The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet the requirements of the current version of the Unit of Competency.

5. Resource implications	The following resources must be provided:  5.1. Workplace (simulated or actual)  5.2. Personal protective equipment (PPE)  5.3. Signage  5.4. Barricades  5.5. Tools and equipment  5.6. Materials
	5.7. Standard operating procedure
	5.8. Projector
	5.9. Stationary
	5.10. Learning manual
6. Methods of assessment	Methods of assessment may include but is not limited to:  6.1. Written test
	6.2. Oral test
	6.3. Observation
	6.4. Demonstration
	6.5. Portfolio
7. Context of assessment	7.1. Competency assessment must be done in a training institute or an actual or simulated workplace after completion of this unit of competency.
	<b>7.2.</b> Assessment must be done by a suitably qualified/certified assessor.

# **Accreditation Requirements**

Unit Title:	Erect and dismantle scaffolding	
Unit Code:	SEIP-CON-SS-02-O	
Nominal Hours:	70 hours	
Unit Descriptor:	This unit covers the skills, knowledge and attitudes required to erect and dismantle scaffolding. It specifically includes erecting scaffolding, inspecting, repairing and altering erected scaffolding, dismantling scaffolding, and cleaning and maintaining work area.	
Elements of Competency	Performance Criteria (bold and underlined terms are elaborated in the Range of Variables)	
1. Erect scaffolding	<ol> <li>Job requirement is confirmed and work tasks identified.</li> <li>Loading on scaffolding and support structures is determined.</li> <li>Site access and egress routes are identified.</li> <li>Scaffolding and components are identified and selected.</li> <li>Sole board/base plate is selected as per manufacturer's specifications.</li> <li>Scaffolding it set out and erected as per standard operating procedure and manufacturer's specifications.</li> <li>Static lines are erected and installed.</li> <li>Lifting device is assembled and erected.</li> </ol>	
Inspect, repair and adjust scaffolding	<ul> <li>2.1. Erected scaffolding is inspected for damage, corrosion, wear and tear, and compatibility.</li> <li>2.2. Use of scaffolding is checked against manufacturer's specifications including load allowance.</li> <li>2.3. Scaffolding stability is checked and corrected where required.</li> <li>2.4. Repair and/or adjustment is carried out, if necessary.</li> <li>2.5. Inspection report is completed.</li> </ul>	
3. Dismantle scaffolding	<ul> <li>3.1. Scaffolding is isolated and appropriately signed and barricaded to ensure safe dismantling.</li> <li>3.2. Scaffolding is carefully dismantled using reverse erection procedure.</li> <li>3.3. Scaffolding components are inventoried and returned to storage area as per standard operating procedure.</li> </ul>	
Clean and maintain work area	<ul> <li>4.1. Tools, equipment and materials are cleaned, maintained and stored.</li> <li>4.2. Work area is cleaned and maintained, and waste material disposed of.</li> <li>4.3. Defective or faulty tools and equipment are recorded and reported.</li> </ul>	

Range of Variables		
Variable	Range (may include but not limited to)	
1. Scaffolding	<ul><li>1.1. Steel</li><li>1.2. Timber</li><li>1.3. Bamboo</li></ul>	
2. Components	<ul> <li>2.1. Bracing</li> <li>2.2. Fixed/rotating clamps</li> <li>2.3. U-jack</li> <li>2.4. Plate jack</li> <li>2.5. Lock pins</li> <li>2.6. Steel/wood platform</li> <li>2.7. Steel/wood ladder</li> <li>2.8. Nuts and bolts</li> </ul>	
3. Lifting device	<ul><li>3.1. Forklift</li><li>3.2. Truck crane</li><li>3.3. Tower crane</li><li>3.4. Derrick</li><li>3.5. Pulley</li><li>3.6. Hoist</li></ul>	

current version of the Unit of Competency.		
Critical aspect of competency	Assessment must evidence that the candidate:  1.1. Erected scaffolding  1.2. Determined loading	
	<ul><li>1.3. Installed static lines</li><li>1.4. Assembled and erected lifting device</li></ul>	
	<ul><li>1.5. Inspected scaffolding</li><li>1.6. Dismantled scaffolding</li><li>1.7. Cleaned and maintained work area</li></ul>	
2. Underpinning knowledge	<ul> <li>2.1. Scaffolding</li> <li>2.2. Loading allowance</li> <li>2.3. Erection and dismantling process</li> <li>2.4. Static lines</li> <li>2.5. Lifting devices</li> <li>2.6. Inspection procedure</li> <li>2.7. Standard operating procedure</li> <li>2.8. Cleaning and maintenance procedure</li> </ul>	

Evidence Guide	
The evidence must be authentic, v current version of the Unit of Comp	valid, sufficient, reliable, consistent and recent and meet the requirements of the petency.
3. Underpinning skills	<ul> <li>3.1. Erecting scaffolding</li> <li>3.2. Installing static lines</li> <li>3.3. Assembling lifting device</li> <li>3.4. Inspecting scaffolding</li> <li>3.5. Repairing scaffolding</li> <li>3.6. Dismantling scaffolding</li> <li>3.7. Cleaning and maintaining work area</li> </ul>
4. Underpinning attitudes	<ul> <li>4.1. Tidy and punctual</li> <li>4.2. Prompt in carrying out activities</li> <li>4.3. Sincere and honest concerning duties</li> <li>4.4. Active on teamwork</li> <li>4.5. Eager to learn</li> <li>4.6. Concerned for proper use of tools</li> <li>4.7. Committed to occupational health and safety practices</li> <li>4.8. Respectful of peers, subordinates and seniors in the workplace</li> <li>4.9. Communicate with peers and seniors in the workplace</li> </ul>
5. Resource implications	The following resources must be provided:  5.1. Workplace (simulated or actual)  5.2. Personal protective equipment (PPE)  5.3. Signage  5.4. Barricades  5.5. Tools and equipment  5.6. Scaffolding  5.7. Scaffolding components  5.8. Lifting device  5.9. Inspection report  5.10. Standard operating procedure  5.11. Projector  5.12. Stationary  5.13. Learning manual
6. Methods of assessment	Methods of assessment may include but is not limited to:  6.1. Written test  6.2. Oral test

6.3. Observation6.4. Demonstration

**6.5.** Portfolio

The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet the requirements of the current version of the Unit of Competency.

- 7. Context of assessment
- **7.1.** Competency assessment must be done in a training institute or an actual or simulated workplace after completion of this unit of competency.
- **7.2.** Assessment must be done by a suitably qualified/certified assessor.

# **Accreditation Requirements**

Unit Title:	Install shuttering using timber		
Unit Code:	SEIP-CON-SS-03-O		
Nominal Hours:	60 hours		
Unit Descriptor:	This unit covers the skills, knowledge and attitudes required to install shuttering using timber. It specifically includes planning and preparing for shuttering works, installing shuttering using timber, inspect, repair and alter installed shuttering, removing shuttering, and cleaning and maintaining work area.		
Elements of Competency	Performance Criteria (bold and underlined terms are elaborated in the Range of Variables)		
Plan and prepare for shuttering works	Work requirements, including plans and specifications, are identified and correctly interpreted.		
	1.2. Job instructions are read and clarified where needed.		
	<b>1.3.</b> Work area is inspected and prepared as per job requirement.		
	<ol><li>Signage and barricade requirements are identified and employed.</li></ol>		
	<b>1.5.</b> Appropriate personal protective equipment (PPE) is identified and selected.		
	<b>1.6.</b> Tools and equipment are identified, checked for serviceability and selected.		
	1.7. Shuttering and components are identified and selected.		
	<b>1.8.</b> Material quantity requirements are calculated as per plans and specifications.		
Install shuttering using timber	Use of shuttering is checked against job requirement and work tasks identified.		
	2.2. Loading on shuttering and supporting structures is determined.		
	2.3. Shuttering is installed as per <u>building structure component</u> requirements.		
	2.4. Shuttering components are installed as per <u>specified</u> <u>tolerance</u> requirements.		
	2.5. Static lines are erected and installed.		
Inspect, repair and adjust shuttering	<b>3.1.</b> Installed shuttering is inspected for damage, corrosion, wear and tear, and compatibility.		
	3.2. Shuttering stability is checked and corrected where required.		
	3.3. Repair and/or adjustment is carried out, if necessary.		
	3.4. Inspection report is completed.		
4. Remove shuttering	<b>4.1.</b> Work area is appropriately signed and barricaded to ensure safe removal of shuttering.		
	<b>4.2.</b> Shuttering is carefully removed using reverse installation procedure.		
	<b>4.3.</b> Shuttering components are inventoried and returned to storage area as per standard operating procedure.		

Clean and maintain work     area	<b>5.1.</b> Tools, equipment and materials are cleaned, maintained and stored.
	<b>5.2.</b> Work area is cleaned and maintained, and waste material disposed of.
	<b>5.3.</b> Defective or faulty tools and equipment are recorded and reported.

Range of Variables		
Variable	Range (may include but not limited to)	
Shuttering and components	1.1. Shutters:	
	1.1.1. Frames	
	1.1.2. Tubular post	
	1.1.3. Connectors	
	1.1.4. Shoring	
	<b>1.1.5.</b> Planks	
	1.2. Components:	
	1.2.1. Wooden panels	
	1.2.2. Stiffener/frame	
	<b>1.2.3</b> . Braces	
	1.2.4. Connectors	
	1.3. Fasteners:	
	1.3.1. Nails	
	<b>1.3.2.</b> Screws	
	1.3.3. Nuts and bolts	
	1.3.4. Lock washers/pins	
	<b>1.3.5.</b> Tie wire	
	1.4. Material:	
	1.4.1. Timber	
	<b>1.4.2.</b> Plywood	
	<b>1.4.3.</b> Lumber	
2. Building structure	2.1. Foundation	
component	2.2. Column	
	2.3. Beam	
	2.4. Slab	
	2.5. Wall	
	2.6. Lintel	
	2.7. Stairs	
	2.8. Arch	
	2.9. Shell	

Range of Variables		
Variable	Range (may include but not limited to)	
3. Specified tolerance	<ul><li>3.1. Linear measurement</li><li>3.2. Alignment</li><li>3.3. Squareness</li><li>3.4. Level</li><li>3.5. Plumbness</li></ul>	

# **Evidence Guide** The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet the requirements of the

current version of the Unit of Competency.					
Critical aspect of competency	<ol> <li>1.1. Planned and prepared for work</li> <li>1.2. Installed shuttering</li> <li>1.3. Determined loading</li> <li>1.4. Identified specified tolerances</li> <li>1.5. Installed static lines</li> <li>1.6. Inspected shuttering</li> <li>1.7. Removed shuttering</li> <li>1.8. Cleaned and maintained work area</li> </ol>				
2. Underpinning knowledge	<ul> <li>2.1. Timber shuttering</li> <li>2.2. Load allowance</li> <li>2.3. Specified tolerances</li> <li>2.4. Installation and removal process</li> <li>2.5. Static lines</li> <li>2.6. Inspection procedure</li> <li>2.7. Standard operating procedure</li> <li>2.8. Cleaning and maintenance procedure</li> </ul>				
3. Underpinning skills	<ul> <li>3.1. Installing shuttering</li> <li>3.2. Installing static lines</li> <li>3.3. Inspecting shuttering</li> <li>3.4. Repairing shuttering</li> <li>3.5. Removing shuttering</li> <li>3.6. Cleaning and maintaining work area</li> </ul>				

The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet the requirements of the current version of the Unit of Competency.

4.	Underpinning attitudes

- **4.1.** Tidy and punctual
- 4.2. Prompt in carrying out activities
- 4.3. Sincere and honest concerning duties
- 4.4. Active on teamwork
- 4.5. Eager to learn
- 4.6. Concerned for proper use of tools
- 4.7. Committed to occupational health and safety practices
- **4.8.** Respectful of peers, subordinates and seniors in the workplace
- 4.9. Communicate with peers and seniors in the workplace

# 5. Resource implications

The following resources must be provided:

- **5.1.** Workplace (simulated or actual)
- **5.2.** Personal protective equipment (PPE)
- 5.3. Signage
- 5.4. Barricades
- **5.5.** Tools and equipment
- 5.6. Timber shuttering
- 5.7. Shuttering components
- **5.8.** Inspection report
- 5.9. Standard operating procedure
- **5.10.** Projector
- 5.11. Stationary
- 5.12. Learning manual

#### 6. Methods of assessment

Methods of assessment may include but is not limited to:

- 6.1. Written test
- 6.2. Oral test
- 6.3. Observation
- 6.4. Demonstration
- 6.5. Portfolio

#### 7. Context of assessment

- **7.1.** Competency assessment must be done in a training institute or an actual or simulated workplace after completion of this unit of competency.
- **7.2.** Assessment must be done by a suitably qualified/certified assessor.

#### **Accreditation Requirements**

Unit Title:	Install shuttering using modular steel frame				
Unit Code:	SEIP-CON-SS-04-O				
Nominal Hours:	60 hours				
Unit Descriptor:	This unit covers the skills, knowledge and attitudes required to install shuttering using modular steel frame. It specifically includes planning and preparing for shuttering works, installing shuttering using modular steel frame, striping shuttering, removing shuttering, and cleaning and maintaining work area.				
Elements of Competency	Performance Criteria (bold and underlined terms are elaborated in the Range of Variables)				
Plan and prepare for shuttering works	1.1. Work requirements, including plans and specifications, are identified and correctly interpreted.				
	1.2. Job instructions are read and clarified where needed.				
	<b>1.3.</b> Work area is inspected and prepared as per job requirement.				
	<b>1.4.</b> Signage and barricade requirements are identified and employed.				
	<b>1.5.</b> Appropriate personal protective equipment (PPE) is identified and selected.				
	<b>1.6.</b> Tools and equipment are identified, checked for serviceability and selected.				
	1.7. Shuttering and materials are identified and selected.				
	<b>1.8.</b> Material quantity requirements are calculated as per plans and specifications.				
Install shuttering using modular steel frame	2.1. Use of modular steel frame shuttering is checked against job requirement and work tasks identified.				
	<b>2.2.</b> Footing and/or slab is read and interpreted from plans and specifications.				
	<b>2.3.</b> Shuttering is set out as per job requirement and standard operating procedure.				
	2.4. Loading on shuttering and supporting structures is determined.				
	<b>2.5.</b> Fixings and fasteners are selected as per job requirements.				
	2.6. Shutters and edge boxing are constructed and installed.				
	<b>2.7.</b> Shuttering support is braced, and block-outs and cast-in services are installed.				
	<b>2.8.</b> Release agents are applied to shuttering face as per manufacturer's specifications.				
3. Strip shuttering	<b>3.1.</b> Edge boxing and bracing support is removed in safely and in sequence.				
	<b>3.2.</b> Steel components are cleaned, oiled and stored as per standard operating procedure.				
	Damage shuttering components are repaired or safely disposed of.				

4. Remove shuttering	<b>4.1.</b> Work area is appropriately signed and barricaded to ensure safe removal of shuttering.
	<b>4.2.</b> Shuttering is carefully removed using reverse installation procedure.
	<b>4.3.</b> Shuttering components are inventoried and returned to storage area as per standard operating procedure.
Clean and maintain work area	<b>5.1.</b> Tools, equipment and materials are cleaned, maintained and stored.
	<b>5.2.</b> Work area is cleaned and maintained, and waste material disposed of.
	<b>5.3.</b> Defective or faulty tools and equipment are recorded and reported.

Range of Variables					
Variable	Range (may include but not limited to)				
Shuttering and materials	<ul><li>1.1. Shuttering:</li><li>1.1.1. Includes pre-fabricated or in situ and rigid to withstand wet concrete mass</li></ul>				
	<b>1.1.2.</b> Formwork must comply with height and level specifications				
	1.2. Materials:				
	1.2.1. Nuts and bolts				
	1.2.2. Boxing (timber, metal, masonry)				
	1.2.3. Coach screws				
	1.2.4. Metal brackets				
	1.2.5. Nails and spikes				
	1.2.6. Fasteners				
	1.2.7. Steel tie rods				

<u> </u>	•
1. Critical aspect of	Assessment must evidence that the candidate:
competency	1.1. Planned and prepared for work
	1.2. Installed shuttering
	1.3. Determined loading
	1.4. Installed edge boxing
	1.5. Braced shuttering support
	1.6. Stripped shuttering
	1.7. Removed shuttering
	1.8. Cleaned and maintained work area

	etency.
2. Underpinning knowledge	2.1. Modular steel frame shuttering
	2.2. Load allowance
	2.3. Installation and removal process
	2.4. Stripping process
	2.5. Edge boxing
	2.6. Bracing
	2.7. Release agents
	2.8. Standard operating procedure
	2.9. Cleaning and maintenance procedure
3. Underpinning skills	3.1. Installing shuttering
	3.2. Determining load allowance
	3.3. Stripping shuttering
	3.4. Installing edge boxing
	3.5. Bracing shuttering support
	3.6. Removing shuttering
	3.7. Cleaning and maintaining work area
4. Underpinning attitudes	4.1. Tidy and punctual
	4.2. Prompt in carrying out activities
	4.3. Sincere and honest concerning duties
	4.4. Active on teamwork
	4.5. Eager to learn
	4.6. Concerned for proper use of tools
	4.7. Committed to occupational health and safety practices
	<b>4.8.</b> Respectful of peers, subordinates and seniors in t workplace
	4.9. Communicate with peers and seniors in the workplace
5. Resource implications	The following resources must be provided:
	5.1. Workplace (simulated or actual)
	5.2. Personal protective equipment (PPE)
	5.3. Signage
	5.4. Barricades
	5.5. Tools and equipment
	5.6. Modular steel frame shuttering
	5.7. Shuttering components
	5.8. Inspection report
	J.o. Inspection report

**5.10.** Projector**5.11.** Stationary

**5.12.** Learning manual

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The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet the requirements of the current version of the Unit of Competency.

6. Methods of assessment	Methods of assessment may include but is not limited to: 6.1. Written test 6.2. Oral test 6.3. Observation 6.4. Demonstration 6.5. Portfolio
7. Context of assessment	<ul><li>7.1. Competency assessment must be done in a training institute or an actual or simulated workplace after completion of this unit of competency.</li><li>7.2. Assessment must be done by a suitably qualified/certified assessor.</li></ul>

#### **Accreditation Requirements**

Unit Title:	Install shuttering using aluminium and plastic				
Unit Code:	SEIP-CON-SS-05-O				
Nominal Hours:	50 hours				
Unit Descriptor:	This unit covers the skills, knowledge and attitudes required to install shuttering using aluminium and plastic. It specifically includes planning and prepare for shuttering works, installing shuttering using aluminium and plastic, removing shuttering, and cleaning and maintaining work area.				
Elements of Competency	Performance Criteria (bold and underlined terms are elaborated in the Range of Variables)				
Plan and prepare for shuttering works	1.1. Work requirements, including plans and specifications, are identified and correctly interpreted.				
	1.2. Job instructions are read and clarified where needed.				
	<b>1.3.</b> Work area is inspected and prepared as per job requirement.				
	<b>1.4.</b> Signage and barricade requirements are identified and employed.				
	<b>1.5.</b> Appropriate personal protective equipment (PPE) is identified and selected.				
	<b>1.6.</b> Tools and equipment are identified, checked for serviceability and selected.				
	1.7. Shuttering and materials are identified and selected.				
	<b>1.8.</b> Material quantity requirements are calculated as per plans and specifications.				
Install shuttering using aluminium and plastic	2.1. Use of aluminium and plastic shuttering is checked against job requirement and work tasks identified.				
	<b>2.2.</b> Footing and/or slab is read and interpreted from plans and specifications.				
	<b>2.3.</b> Shuttering is set out as per job requirement and standard operating procedure.				
	2.4. Loading on shuttering and supporting structures is determined.				
	<b>2.5.</b> Fixings and fasteners are selected as per job requirements.				
	2.6. Shutters and edge boxing are constructed and installed.				
	<b>2.7.</b> Shuttering support is braced, and block-outs and cast-in services are installed.				
	<b>2.8.</b> Release agents are applied to shuttering face as per manufacturer's specifications.				
3. Remove shuttering	<b>3.1.</b> Work area is appropriately signed and barricaded to ensure safe removal of shuttering.				
	<b>3.2.</b> Shuttering is carefully removed using reverse installation procedure.				
	<b>3.3.</b> Shuttering components are inventoried and returned to storage area as per standard operating procedure.				

Clean and maintain work     area	<b>4.1.</b> Tools, equipment and materials are cleaned, maintained and stored.
	<b>4.2.</b> Work area is cleaned and maintained, and waste material disposed of.
	<b>4.3.</b> Defective or faulty tools and equipment are recorded and reported.

Range of Variables				
Variable	Range (may include but not limited to)			
Shuttering and materials	<ul> <li>1.1. Shuttering:</li> <li>1.1.1. Includes pre-fabricated or in situ and rigid to withstand wet concrete mass</li> <li>1.1.2. Formwork must comply with height and level specifications</li> <li>1.2. Materials:</li> <li>1.2.1. Nuts and bolts</li> <li>1.2.2. Boxing (timber, metal, masonry)</li> <li>1.2.3. Coach screws</li> <li>1.2.4. Metal brackets</li> <li>1.2.5. Nails and spikes</li> <li>1.2.6. Fasteners</li> <li>1.2.7. Steel tie rods</li> </ul>			

current version of the Unit of Competency.	
Critical aspect of competency	Assessment must evidence that the candidate:  1.1. Planned and prepared for work  1.2. Installed shuttering  1.3. Determined loading  1.4. Installed edge boxing  1.5. Braced shuttering support  1.6. Removed shuttering  1.7. Cleaned and maintained work area

Evidence Guide The evidence must be authentic, va current version of the Unit of Compe	lid, sufficient, reliable, consistent and recent and meet the requirements of the etency.
2. Underpinning knowledge	<ul> <li>2.1. Modular steel frame shuttering</li> <li>2.2. Load allowance</li> <li>2.3. Installation and removal process</li> <li>2.4. Edge boxing</li> <li>2.5. Bracing</li> <li>2.6. Release agents</li> <li>2.7. Standard operating procedure</li> <li>2.8. Cleaning and maintenance procedure</li> </ul>
3. Underpinning skills	<ul> <li>3.1. Installing shuttering</li> <li>3.2. Determining load allowance</li> <li>3.3. Installing edge boxing</li> <li>3.4. Bracing shuttering support</li> <li>3.5. Removing shuttering</li> <li>3.6. Cleaning and maintaining work area</li> </ul>
4. Underpinning attitudes	<ul> <li>4.1. Tidy and punctual</li> <li>4.2. Prompt in carrying out activities</li> <li>4.3. Sincere and honest concerning duties</li> <li>4.4. Active on teamwork</li> <li>4.5. Eager to learn</li> <li>4.6. Concerned for proper use of tools</li> <li>4.7. Committed to occupational health and safety practices</li> <li>4.8. Respectful of peers, subordinates and seniors in the workplace</li> <li>4.1. Communicate with peers and seniors in the workplace</li> </ul>
5. Resource implications	The following resources must be provided:  5.1. Workplace (simulated or actual)  5.2. Personal protective equipment (PPE)  5.3. Signage  5.4. Barricades  5.5. Tools and equipment  5.6. Aluminium and plastic shuttering  5.7. Shuttering components  5.8. Standard operating procedure

**5.9.** Projector**5.10.** Stationary

**5.1.** Learning manual

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The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet the requirements of the current version of the Unit of Competency.

6. Methods of assessment	Methods of assessment may include but is not limited to: 6.1. Written test 6.2. Oral test 6.3. Observation 6.4. Demonstration 6.1. Portfolio
7. Context of assessment	<ul><li>7.1. Competency assessment must be done in a training institute or an actual or simulated workplace after completion of this unit of competency.</li><li>7.2. Assessment must be done by a suitably qualified/certified assessor.</li></ul>

#### **Accreditation Requirements**

Unit Title:	Inspect, repair and store shuttering	
Unit Code:	SEIP-CON-SS-06-O	
Nominal Hours:	20 hours	
Unit Descriptor:	This unit covers the skills, knowledge and attitudes required to inspect, repair and store shuttering. It specifically includes inspecting shuttering, repairing shuttering, and storing shuttering.	
Elements of Competency	Performance Criteria (bold and underlined terms are elaborated in the Range of Variables)	
1. Inspect shuttering	<ul> <li>1.1. Shuttering materials are checked for usability as per standard operating procedure.</li> <li>1.2. <u>Unusable shuttering materials</u> are separated and disposed of correctly.</li> </ul>	
2. Repair shuttering	<ul><li>2.1. Shuttering materials are inspected and checked for repair.</li><li>2.2. Defective shuttering materials and components are repaired.</li></ul>	
3. Store shuttering	<ul><li>3.1. Shuttering materials are cleaned and inventoried as per standard operating procedure.</li><li>3.2. Shuttering materials are safely and securely stored as per standard operating procedure.</li></ul>	

Range of Variables		
Variable	Range (may include but not limited to)	
Unusable shuttering materials	<ul><li>1.1. Damaged</li><li>1.2. Broken</li><li>1.3. Deformed</li><li>1.4. Twisted</li><li>1.5. Cracked</li></ul>	

# Evidence Guide The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet the requirements of the current version of the Unit of Competency. 1. Critical aspect of competency Assessment must evidence that the candidate: 1.1. Inspected shuttering 1.2. Repaired shuttering 1.3. Stored shuttering 2.1. Shuttering 2.2. Inspection process 2.3. Routine repairs 2.4. Inventory procedure 2.5. Storage logistics

Evidence Guide  The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet the requirements of the current version of the Unit of Competency.		
3. Underpinning skills	<ul><li>3.1. Inspecting shuttering</li><li>3.2. Repairing shuttering</li><li>3.3. Inventorying shuttering</li><li>3.4. Storing shuttering</li></ul>	
4. Underpinning attitudes	<ul> <li>4.1. Tidy and punctual</li> <li>4.2. Prompt in carrying out activities</li> <li>4.3. Sincere and honest concerning duties</li> <li>4.4. Active on teamwork</li> <li>4.5. Eager to learn</li> <li>4.6. Concerned for proper use of tools</li> <li>4.7. Committed to occupational health and safety practices</li> <li>4.8. Respectful of peers, subordinates and seniors in the workplace</li> <li>4.9. Communicate with peers and seniors in the workplace</li> </ul>	
5. Resource implications	The following resources must be provided:  5.1. Workplace (simulated or actual)  5.2. Personal protective equipment (PPE)  5.3. Tools and equipment  5.4. Shuttering  5.5. Shuttering components  5.6. Standard operating procedure  5.7. Projector  5.8. Stationary  5.9. Learning manual	
6. Methods of assessment	Methods of assessment may include but is not limited to: 6.1. Written test 6.2. Oral test 6.3. Observation 6.4. Demonstration 6.5. Portfolio	
7. Context of assessment	<ul><li>7.1. Competency assessment must be done in a training institute or an actual or simulated workplace after completion of this unit of competency.</li><li>7.2. Assessment must be done by a suitably qualified/certified assessor.</li></ul>	

The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet the requirements of the current version of the Unit of Competency.

# **Accreditation Requirements**