Competency Standards for Caribbean Vocational Qualifications (CVQ)

CCBCG20702 Level II in Concreting

Unit Number	Unit Title	Mandatory /Elective	Hours
BCGCOR0001A	Carry out interactive workplace communication	Mandatory	20
BCGCOR0011A	Carry out OH&S requirements	Mandatory	40
BCGCOR0021A	Plan and organise work	Mandatory	20
BCGCOR0031A	Draw and interpret simple drawings	Mandatory	20
BCGCOR0041A	Carry out measurements and calculations	Mandatory	20
BCGCOR0051A	Use hand and power tools	Mandatory	20
BCGCOR0061A	Use small plant and equipment	Mandatory	40
BCGCOR0071A	Erect and dismantle restricted height scaffolding	Mandatory	40
BCGCOR0081A	Use simple levelling devices	Mandatory	10
BCGMAS0101A	Carry out concreting to simple forms	Mandatory	20
BCGCOR0111A	Handle construction materials and safely dispose of waste	Mandatory	10
ITICOR0011A	Carry out data entry and retrieval procedures	Mandatory	40
BCGCOR0212A	Prepare surfaces	Mandatory	40
BCGCOR0242A	Carry out levelling	Mandatory	20
BCGMAS0292A	Carry out concrete work	Mandatory	40
BCGMAS0892A	Finish concrete	Mandatory	20
BCGMAS0912A	Place concrete	Mandatory	20
BCGTIL0121A	Prepare for wall and floor tiling	Elective	40
BCGMAS0091A	Carry out excavation and install support	Elective	20
BCGMAS0131A	Prepare for solid plastering	Elective	40
BCGMAS0151A	Prepare for construction process (brick/block laying)	Elective	40
BCGCAR0161A	Prepare for carpentry construction	Elective	40
BCGCOR0171A	Prepare for demolition process	Elective	40
BCGMAS0181A	Mix cementitous materials (mortar and concrete)	Elective	10
BCGCAR0202A	Assemble simple partition frames	Elective	30
BCGCAR0252A	Erect and strip formwork for concrete work	Elective	20
BCGSTW0262A	Carry out steel-fixing	Elective	40
BCGCAR0312A	Use static machines	Elective	30
BCGCAR0322A	Make set-outs	Elective	20
BCGCAR0662A	Erect/dismantle formwork	Elective	80
BCGMAS0922A	Cure concrete	Elective	20
BCGMAS1232A	Rough cast and render flat surfaces	Elective	120
BCGMAS1242A	Apply solid render	Elective	40
BCGMAS1462A	Construct straight masonry block-work	Elective	60
BSBSBM0012A	Craft personal entrepreneurial strategy	Elective	50

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CCBCG20702 Level II in Concreting (Cont'd.)

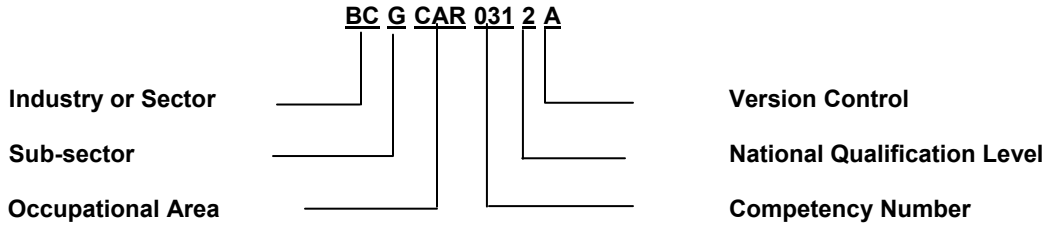
Unit Number	Unit Title	Mandatory /Elective	Hours
BCGCAR0673A	Erect/dismantle jump type formwork	Elective	60
BCGMAS0903A	Transport concrete	Elective	20
BCGSTW0933A	Apply reinforcement schedule	Elective	40
BCGMAS0943A	Carry out special finishes to concrete	Elective	20
BCGMAS0953A	Carry out tilt slab construction	Elective	40
BCGSTW0973A	Carry out monostrand post tensioning	Elective	20
BCGSTW0983A	Carry out stress bar post tensioning	Elective	20
BCGCOR1583A	Read and interpret plans	Elective	20

To be awarded this Caribbean Vocational Qualification (CVQ) all Mandatory competency standards must be achieved. Electives achieved with the qualification will be awarded unit statement of competency.

The nominal training hours are a guide for planning the delivery of Training Programmes.

Legend to Unit Code

Example: BCGCAR0312A



KEY: Man – Mandatory; MAS – Masonry; TIL – Tiling; SBM – Small Business Management; BSB – Business Services (Business); CAR – Carpentry; STW – Steelwork; ITI - Information & Communication (Information Technology); BCG – Building Construction (General)

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BCGCOR0001A: Carry out interactive workplace communication

Competency Descriptor: This unit deals with the skills and knowledge required to effectively perform interactive communication at the workplace, and applies to all individuals working in the construction industry.

Competency Field: General Construction

ELEMENT OF COMPETENCY	PERFORMANCE CRITERIA	
1. Receive and convey information	1.1	Verbal/written instructions received and responded to with correct actions.
	1.2	Instructions conveyed and work signage responded to, with correct action.
	1.3	Information conveyed in basic English so that messages are understood.
2. Carry out face-to-face routine communication	2.1	Routine instructions, messages and schedules are given or followed.
	2.2	Workplace procedures are carried out according to procedures laid down by the company or supervisor.
	2.3	Relevant information is assessed and analysed from a range of sources.
	2.4	Information is selected and sequenced correctly.
3. Work with others	3.1	Suggestions and information are provided relevant to the planning/conduct of the activities.
	3.2	Communication carried out clearly, concisely and effectively so those messages are understood.
4. Participation in simple on-site meeting processes	4.1	Participation in on-site meetings is in accordance to predetermined procedures.
	4.2	Interaction carried out to achieve constructive outcome.

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RANGE STATEMENT

This unit applies to all communication requirements, associated with working with other persons at a site location and carrying out tasks under supervision.

Verbal/written instructions include directions or instructions related to a simple job/task.

Signage may include but are not limited to:

- on-site direction signs
- common site warning signs
- facility or location signs
- traffic signs

Range of information sources may include:

- instructions: oral/memos
- signage
- work schedules/work bulletins
- charts and maps

On-site meeting process may take the form of formal or informal meetings and may include:

- notification (time, place, purpose)
- item discussion
- negotiation outcome

EVIDENCE GUIDE

Competency is to be demonstrated by the effective use of methods of communication relating to instructions, information sources and meeting procedures listed within the range statement relative to the work orientation.

(1) Critical Aspects and Evidence

It is essential that competence be observed in the following aspects:

- communications to include Occupational Health and Safety regulations applicable to work place operations, and organisational policies and procedures
- demonstrate appropriate communications processes prior to and during construction activities

(2) Pre-requisite Relationship of Units

- Nil

(3) Underpinning Knowledge and Skills

Knowledge
knowledge of:

- workplace safety requirements
- types of onsite meetings and their procedures
- how work schedules, charts, work bulletins and memos are used
- how instructions are conveyed in the workplace

Skills
The ability to:

- follow instructions for working safely
- convey information in basic English to invoke correct actions

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(4) Resource Implications

The following resources should be made available:

- Suitable work area appropriate to the construction process
- Appropriate communication documentation relative to the task

(5) Method of Assessment

Competence should be assessed through direct observation and questions related to underpinning knowledge.

Competency in this unit may be determined concurrently, based upon project work.

Competency shall be assessed while work is being done under general guidance, checking at various stages of the process and at the completion of the activity, against the performance criteria and specifications.

(6) Context of Assessment

Competency shall be assessed in the normal or simulated workplace environment and in accordance with safe work procedures.

Assessment shall include those aspects that are consistent with the work environment of this unit.

Competency shall be assessed while work is undertaken autonomously, within a team environment.

Assessment may be by intermittent checking at the various stages of the job application in accordance with the performance criteria, or may be at the completion of the process.

Guidelines will be in line with statutory requirements, the specific policies, procedures and codes of practice of the enterprise.

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CRITICAL EMPLOYABILITY SKILLS

Three levels of performance denote level of competency required to perform a task. These levels do not relate to the NCTVET Qualifications Framework. They relate to the seven areas of generic competency that underpin effective workplace practices.

Levels of Competency		
Level 1.	Level 2.	Level 3.
• Carries out established processes • Makes judgement of quality using given criteria	• Manages process • Selects the criteria for the evaluation process	• Establishes principles and procedures • Evaluates and reshapes process • Establishes criteria for evaluation

Collect, analyse and organise information	Level 1	
Communicate ideas and information	Level 1	
Plan and organise activities	Level 2	
Work with others and in team	Level 1	
Use mathematical ideas and techniques	Level 2	
Solve problems	Level 1	
Use technology	Level 1	

Please refer to the Assessment Guidelines for advice on how to use the Critical Employability Skills

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BCGCOR0011A: Carry out OH&S requirements

Competency Descriptor: This unit deals with the skills and knowledge required to effectively perform work activities to conform to Occupational Health and Safety requirements, and applies to all individuals working in the construction industry.

Competency Field: General and Civil Construction

ELEMENT OF COMPETENCY		PERFORMANCE CRITERIA	
1	Plan and prepare for safe work practices	1.1	Quality assurance requirements associated with company's safety operations recognised and adhered to.
		1.2	Appropriate personal protective equipment selected, correctly fitted and/or made ready for use.
		1.3	Tools and equipment selected consistent with safe work practice requirements of job, checked for serviceability and any faults reported to supervisor.
		1.4	Appropriate barricades, hoardings and signage erected, where applicable, at required job location.
2	Use safe work practices to carry out work	2.1	Work carried out safely and in acc ordance with Statutory regulations for OH&S requirements and company policy.
		2.2	Safety hazards and workplace accidents/incidents identified in course of work and reported in accordance with company policy.
		2.3	Industry/site safety responsibilities known and applied.
		2.4	Fire fighting equipment selected and operated correctly according to type of fire.
		2.5	Current site emergency and first aid procedures known and followed.
		2.6	Signals/sirens for blasting operations recognised and adhered to.

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3	Assume responsibility for safety of self and others	3.1	Appropriate protective equipment correctly selected fitted and used.
		3.2	Safe manual handling techniques used and guidelines for lifting and placing followed.
		3.3	All safety signs, symbols and alarms adhered to.
		3.4	Safety procedures for pre-use check and operation of specified power tools/plant, machinery and equipment followed.
		3.5	Recommended safe practices in handling chemical and potentially hazardous materials followed.
4	Work from ladder and work platforms	4.1	Ladder and work platforms safely erected in planned location.
		4.2	Care taken to avoid overhead power lines and other obstructions.
		4.3	Head and base of ladder or work platform support secured against accidental movement.
		4.4	Work safely performed from ladder and work platform.
		4.5	Appropriate fall arrest equipment utilised in accordance with current OH&S guidelines.
5	Use electrical power supply safely	5.1	Position of power pole/box identified for safe placemen t of leads.
		5.2	Framework support positioned to keep leads at correct height and prevent hazards.
		5.3	Power board visually checked for damage, water entry and stability. Area surrounding board checked for potential hazards.
		5.4	Leads checked for tags and visual damage. Earth leakage protection checked for serviceability.
		5.5	Work safely performed using electrical power supply.

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6	Adhere to emergency procedures	6.1	Emergency equipment able to be located and used as required.
		6.2	Current work site emergency/evacuation procedures adhered to.
7	Carry out general housekeeping	7.1	Waste material disposed of safely in accordance with requirements of site and regulatory legislation.
		7.2	Unused equipment and materials safely and correctly cleaned, maintained and stored.
		7.3	Requirements of site, regulatory bodies and Occupational Health and Safety requirements observed.

RANGE STATEMENT

Quality Assurance requirements may include:

- working environment
- adverse weather conditions
- protection of work personnel
- protection of public

Personal protective equipment may include but is not limited to:

- overalls, safety glasses/goggles, hard hat cap
- dust masks/respirator, safety boots
- ear plugs/muffs
- gloves

Regulatory legislation may include:

- OH&S, Dangerous goods

Manual handling techniques used in accordance with current Occupational Health and Safety.

Emergency equipment and procedures include:

- fire fighting
- medical and first aid
- evacuation

Power connections include:

- isolation transformer
- power pole
- switch board area

Ladders and work platforms include:

- extension ladders
- step ladders
- trestle ladders
- simple work platforms

Safety responsibilities apply to:

- personal protection
- safe interactive work practices (duty of care)
- protection of public and environment

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Reporting of faults may be verbal or written.

EVIDENCE GUIDE

Competency is to be demonstrated by safely and effectively carrying out safe work practices within the range of variables statement relevant to the work orientation.

(1) Critical Aspects of Evidence

It is essential that competence be observed in the following aspects:

- demonstrate compliance with Occupational Health and Safety regulations applicable to workplace operations
- demonstrate application of organisational policies and procedures including Quality Assurance requirements where applicable
- carry out correct procedures prior to and during construction process
- safe and effective operational use of tools, plant and equipment
- carry out appropriate applications in accordance with regulatory and legislative requirements

(2) Pre-requisite Relationship of Units

- Nil

(3) Underpinning Knowledge and Skills

Knowledge
Knowledge of:

- workplace and equipment safety requirements
- materials
- Factory's Act
- other relevant acts, regulations and codes of practice
- company policy

Skills
The ability to:

- work safely to instructions
- use power and hand tools
- select material to requirements
- communicate effectively
- handle material

(4) Resource Implications

The following resources should be made available:

- Suitable work area appropriate to the construction process
- Appropriate equipment, materials and documentation to comply with OH&S legislation and/or company policies
- Hand and power tools, plant and equipment appropriate to the construction process

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(5) Method of Assessment

Competency shall be assessed while work is being done under direct supervision with regular checks, but may include some autonomy when working as part of a team.

Competency in this unit may be determined conc urrently, based upon integrated project work.

Assessment may be by intermittent checking at the various stages of the job application in accordance with the performance criteria.

(6) Context of Assessment

Competency should be assessed in the workplac e or simulated workplace environment in accordance with work practices and safety procedures.

CRITICAL EMPLOYABILITY SKILLS

Three levels of performance denote level of competency required to perform a task. These levels do not relate to the NCTVET Qual ifications Framework. They relate to the seven areas of generic competency that underpin effective workplace practices.

Levels of Competency		
Level 1.	Level 2.	Level 3.
• Carries out established processes • Makes judgement of quality using given criter ia	• Manages process • Selects the criteria for the evaluation process	• Establishes principles and procedures • Evaluates and reshapes process • Establishes criteria for evaluation

Collect, analyse and organise information	Level 1	
Communicate ideas and informat ion	Level 1	
Plan and organise activities	Level 1	
Work with others and in team	Level 1	
Use mathematical ideas and techniques	Level 1	
Solve problems	Level 1	
Use technology	Level 1	

Please refer to the Assessment Guidelines for advice on how to us e the Critical Employability Skills.

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BCGCOR0021A: Plan and organise work

Competency Descriptor: This unit deals with the skills and knowledge required to effectively plan and organise work assignments, and applies to all individuals working in the construction industry.

Construction Field: General Construction

ELEMENT OF COMPETENCY		PERFORMANCE CRITERIA	
1	Identify work requirements	1.1	Instructions for work schedule and performance and quality assurance requirements received, understood and clarified where necessary.
2	Plan process to complete work	2.1	Work identified, prioritised and sequenced to achieve effective completion of work. Major construction process/sequence identified.
3	Select tools, equipment and materials	3.1	Personal protective equipment correctly identified and selected to suit job requirements.
		3.2	Tools, equipment and materials selected to suit job requirements.
		3.3	Key functions of major construction plant and equipment identified.
4	Demonstrate safe and efficient sequence of work	4.1	Work performed safely and in a logical and efficient sequence.
		4.2	Worksite kept clean and clear of debris.
		4.3	Tools and equipment safely located when not in immediate use.
5	Modify plan	5.1	Workplace modified to overcome unforeseen developments that occur as work progresses.
		5.2	Modifications to work plan, based on experience, are identified and incorporated into successive work activities.
6	Report outcomes	6.1	Verbal report provided on completed activities.

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7	Clean up	7.1 Unused materials safely stacked for removal.
		7.2 Debris and waste material removed from job location.
		7.3 Worksite left clean, safe and secure on completion.
		7.4 Tools and equipment cleaned, maintained and stored.

RANGE STATEMENT

Work organisation sequence may range from receiving instructions, to carrying out task, to cleaning up task.

Work plan may be either written or verbal and may include the following:

- preparation of work area
- selections of tools, equipment and materials
- handling of materials, tools and equipment
- housekeeping requirements

Work schedule may be carried out in a singular application or in a team situation.

Work schedule and performance may have to adhere to Quality Assurance poli cy and procedures.

EVIDENCE GUIDE

Competency is to be demonstrated by safe and effective preparation using any of the range of work sequences listed within the range of variables statement relative to the work environment.

(1) Critical Aspects and Evidence

It is essential that competence is observed in the following aspects:

- indicate compliance with Occupational Health and Safety regulations applicable to workplace operations including relevant statutory regulations and legislation
- indicate compliance with organisational policies and procedures including Quality Assurance requirements
- carry out correct procedures prior to and during the application of construction process
- communicate to enable efficient individual/organisational planning of work

(2) Pre-requisite Relationship of Units

- Nil

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(3) Underpinning Knowledge and Skills

Knowledge
Knowledge of:

- workplace and equipment safety requirements
- portable power tools
- hand tools and equipment
- materials appropriate to the task
- materials handling
- quality Assurance

Skills
The ability to:

- work safely to instructions
- use power tools and hand tools
- handle material
- select material
- apply Quality Assurance

(4) Resource Implications

The following resources should be made available:

- general construction materials appropriate to the particular construction process
- hand and power tools appropriate to the construction process
- suitable work area appropriate to the construction process

(5) Method of Assessment

Competency should be assessed while work is bei ng done under direct supervision with regular checks, but may include some autonomy when working as part of a team.

Competency in this unit may be determined concurrently, based upon integrated project work.

Assessment may be by intermittent checking at the various stages of the job application in accordance with the performance criteria.

(6) Context of Assessment

Competency should be assessed in the workplace or simulated workplace environment in accordance with work practices and safety procedures.

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CRITICAL EMPLOYABILITY SKILLS

Three levels of performance denote level of competency required to perform a task. These levels do not relate to the NCTVET Qualifications Framework. They relate to the seven areas of generic competency that underpin effective workplace practices.

Levels of Competency		
Level 1.	Level 2.	Level 3.
• Carries out established processes • Makes judgement of quality using given criteria	• Manages process • Selects the criteria for the evaluation process	• Establishes principles and procedures • Evaluates and reshapes process • Establishes criteria for evaluation

Collect, analyse and organise information	Level 1	
Communicate ideas and information	Level 1	
Plan and organise activities	Level 1	
Work with others and in team	Level 1	
Use mathematical ideas and techniques	Level 1	
Solve problems	Level 1	
Use technology	Level 1	

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BCGCOR0031A: Draw and interpret simple drawings

Competency Descriptor: This unit deals with the skills and knowledge required to effectively draw and interpret simple layout drawings and sketches, and applies to individuals working in the construction industry.

Competency Field: General Construction

ELEMENT OF COMPETENCY		PERFORMANCE CRITERIA	
1	Prepare for drawing	1.1	Drawing instruments and supplies are correctly identified and selected.
		1.2	Alphabet of lines is identified and applied with all lines distinct, easily read and of the appropriate line weight and type.
		1.3	Measurements are performed using appropriate scales.
		1.4	Lettering is constructed distinctly and is eas ily read.
2	Draw geometric constructions	2.1	The completed drawing illustrates a series of geometric shapes and activities.
		2.2	The finished drawing is neat and clear of smudges.
3	Construct multi-view (orthographic 2-D) drawing	3.1	The drawing illustrates three views of specified object with correct line representation.
		3.2	The finished multi-view drawing is constructed correctly.
4.	Develop a pictorial (3D) drawing	4.1	The drawing has a correct view orientation (isometric).
		4.2	The complete pictorial (3D) drawing is correctly developed with hidden features.
5	Construct and dimension drawings	5.1	All major features on the drawing are appropriately dimensioned to correct specification.
		5.2	All necessary details and information are shown.
6	Apply notes and leaders	6.1	The finished drawing is neatly and appropriately labelled.

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		6.2	Completed drawing illustrates correct application of notes and leaders.
7	Prepare freehand sketch	7.1	Sketch correctly drawn with appropriate views where applicable.
		7.2	Necessary dimensions are shown and instructions and/or information conveyed by appropriate use of notes.
8	Interpret details from sketches and drawings	8.1	Components, assemblies or objects correctly identified.
		8.2	Commonly used symbols and abbreviations are recognised.
		8.3	Dimensions and instructions are identified and followed as required.
		8.4	Material requirements are correctly identified as required.

RANGE STATEMENTS

This unit applies to the preparation and interpretation of si mple working drawings and sketches of building components or structures

Drawing instruments and supplies:

- drafting kit
- CAD workstation
- drafting paper
- drawings/modules/photographs

Alphabet of line:

- object line
- hidden line
- centre line
- section line
- dimension
- extension line
- cutting line
- short break line
- phantom line

Measurement systems:

- metres/centimetres
- metric(SI) system

Types of scale:

- architectural
- metric
- engineering
- civil

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Geometric construction to include:

- circles
- regular polygons with four, six and eight sides
- pentagon inscribed within measured circle
- ellipse
- triangles with specified angles
- arcs thru three points; tangent to two circles

Multi-view (orthographic 2-D) drawings:

- full scale (1:1) orthographic 3-view drawing using third angle projection with top, front and right side view – show all hidden features and centrelines

Pictorial (3-D) drawing to include:

- isometric corner with left and right side lines each 30 degrees up from horizontal and third line at a vertical, with all three lines joining in a common intersection
- full scale (1:1) basic isometric drawing

Dimension drawings:

- dimensioning styles and methods: co-ordinate, linear/datum
- dimensioning 2-D drawing
- dimensioning complex shapes: spheres, cylinders, tapers, pyramids

EVIDENCE GUIDE

Competency is to be demonstrated by developing and effectively reading and interpreting simple drawings and sketches to locate or identify specified features or specifications in accordance with the performance criteria and the range listed within the range statement.

(1) Critical Aspects and Evidence

It is essential that competence is observed in the following aspects:

- identify and understand various types of drawings
- identify alphabet of lines, scales, lettering, dimensions, symbols, ab breviations and key features
- identify title panel and reference date of drawings

(2) Pre-requisite Relationship of Units

- Nil

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(3) Underpinning Knowledge and Skills

Knowledge
Knowledge of:

- types and use of drawing instruments and supplies
- identification of alphabet of lines, line type variation, order of usage and application on drawings
- types of scale and proportion and how they are used for measurement
- symbols, dimensions and terminology
- types of drawings and their applications

Skills
The ability to:

- make simple freehand sketches
- prepare technical drawings with drawing instruments and with Auto CAD
- read and interpret sketches and working drawings
- measure accurately
- communicate effectively

(4) Resource Implications

The following resources should be made available:

- drawing instruments/CAD
- drawing supplies
- objects for drawing

(5) Method of Assessment

Competency may be assessed in a training institution under direct supervision with regular checks by the instructor.

Competency in this unit would be determined by an individual working alone or based upon integrated project work.

Assessment would be continuous by checking at the various stages of the job application in accordance with the performance criteria.

The candidate will have access to drawing instrument, equipment, materials and documentation required

(6) Context of Assessment

Competency should be assessed in a classroom environment in accordance with work practices and safety procedures.

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CRITICAL EMPLOYABILITY SKILLS

Three levels of performance denote level of competency required to perform a task. These levels do not relate to the NCTVET Qualifications Framework. They relate to the seven areas of generic competency that underpin effective workplace practices.

Levels of Competency		
Level 1.	Level 2.	Level 3.
• Carries out established processes • Makes judgement of quality using given criteria	• Manages process • Selects the criteria for the evaluation process	• Establishes principles and procedures • Evaluates and reshapes process • Establishes criteria for evaluation

Collect, analyse and organise information	Level 1	
Communicate ideas and information	Level 1	
Plan and organise activities	Level 1	
Work with others and in team	Level 1	
Use mathematical ideas and techniques	Level 1	
Solve problems	Level 1	
Use technology	Level 1	

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BCGCOR0041A: Carry out measurements and calculations

Competency Descriptor: This unit deals with the skills and knowledge required to effectively carry out measurements and calculation of work to required tolerance, and applies to individuals working in the construction industry.

Competency Field: General Construction

ELEMENT OF COMPETENCY	PERFORMANCE CRITERIA	
1. Obtain measurements	1.1	Accurate measurements obtained to job instruction using rule, tape and/or square.
	1.2	Quality Assurance requirements associated with company's construction operations recognised and adhered to.
2. Perform simple calculations	2.1	Simple calculations involving length, perimeter, mass and volume using four basic operations (+,-, x, /), are carried out.
3 Estimate approximate quantities	3.1	Measurements or quantities estimated (approximately) on site or from job instruction.
	3.2	Information obtained correctly from job instruction.
	3.3	Measurements correctly identified/recorded without error.
	3.4	Quantities of materials suitable for work undertaken are calculated and recorded to job instructions.
	3.5	Costs for a simple project estimated to be within + or – 10%.

RANGE STATEMENT

This unit applies to simple projects applicable to:

- timber frames
- structural steelwork
- concrete
- brick/block work
- joinery
- tiling
- sheeting/panelling
- plastering
- final finishes
- fences
- formwork
- excavation work

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Materials include all materials utilised in construction of commercial, industrial/domestic and civil construction projects, including hardware items.

Calculations to include:

- area
- perimeter
- volume
- mass
- scales
- ratios (ingredients/elements and triangulation)
- proportion

Job instruction may involve:

- verbal direction/instruction
- written instruction
- provision of job drawing and details

EVIDENCE GUIDE

Competency is to be demonstrated by the effective calculation of measurements and calculations of materials in accordance with the range listed in the range statement, relevant to the work orientation.

(1) Critical Aspects of Evidence

It is essential that competence be observed in the following aspects:

- communicate effectively to enable accurate calculations and measurements
- demonstrate effective use of measuring devices
- accurate measurements taken and recorded
- perform simple calculations to specifications
- estimate quantities and costs to requirements

(2) Pre-requisite Relationship of Units

- Nil

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(3) Underpinning Knowledge and Skills

Knowledge
Knowledge of:

- drawings and specifications
- materials relevant to the construction process
- basic operations in simple geometry, measurement and calculations
- costing relative to the construction process

Skills
The ability to:

- read and interpret drawings
- measure and calculate manually
- record measurements
- operate electronic calculating devices
- communicate effectively

(4) Resource Implications

The following resources should be made available:

- information on construction materials appropriate to the relevant construction p rocess
- suitable work area appropriate to the activity
- suitable site plans/drawings and/or specifications
- measuring and calculating devices

(5) Method of Assessment

Competency should be assessed while work is being done under direct supervision with regu lar checks, but may include some autonomy when working as part of a team.

Competency in this unit may be determined concurrently, based upon integrated project work.

Assessment may be intermittent checking at the various stages of the job application in accordance with the performance criteria, or may be at the completion of each process.

(6) Context of Assessment

Competency should be assessed in the workplace or simulated workplace environment in accordance with work practices and safety procedures.

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CRITICAL EMPLOYABILITY SKILLS

Three levels of performance denote level of competency required to perform a task. These levels do not relate to the NCTVET Qualifications Framework. They relate to the seven areas of generic competency that underpin effective workplace practices.

Levels of Competency		
Level 1	Level 2	Level 3
• Carries out established processes • Makes judgement of quality using given criteria	• Manages process • Selects the criteria for the evaluation process	• Establishes principles and procedures • Evaluates and reshapes process • Establishes criteria for evaluation

Collect, analyse and organise information	Level 1	
Communicate ideas and information	Level 1	
Plan and organise activities	Level 1	
Work with others and in team	Level 1	
Use mathematical ideas and techniques	Level 1	
Solve problems	Level 1	
Use technology	Level 1	

Please refer to the Assessment Guidelines for advice on how to use the Critical Employability Skills.

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BCGCOR0051A: Use hand and power tools

Competency Descriptor: This unit deals with skills and knowledge required to competently select and use appropriate hand and power tools of construction trades, and applies to individuals in the construction industry.

Competency Field: General Construction

ELEMENT OF COMPETENCY		PERFORMANCE CRITERIA	
1	Identify hand and power tools	1.1	Regular power tool applications in workshop operations recognised.
		1.2	Types of hand and power tools and their functions identified.
		1.3	Sources of power supply recognised.
2	Select hand tools	2.1	OH&S requirements for using hand tools recognised and adhered to.
		2.2	Appropriate personal protective equipment selected, correctly fitted and used.
		2.3	Hand tools selected consistent with needs of job.
		2.4	Tools checked for serviceability and safety and any faults reported to supervisor.
		2.5	Equipment selected to hold or support material for power tools application where applicable.
3	Use hand tools	3.1	Material located and held in position for hand tool application.
		3.2	Hand tools safely and effectively used according to their intended use.
		3.3	Hand tools safely located when not in immediate use.
4	Select power tools	4.1	Occupational Health and Safety (OH&S) requirements for using power tools recognised and adhered to.
		4.2	Appropriate personal protective equipment selected, correctly fitted and used.

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		4.3	Power tools and leads/hoses selected consistent with needs of job in accordance with conventional work practice.
		4.4	Power tools and leads/hoses visually checked for serviceability/safety in accordance with OH&S requirements and any faults reported to supervisor.
		4.5	Equipment selected to hold or support materials for power tool application where applicable.
5	Establish power supply to work location	5.1	Route identified for safe placement of leads/hoses clear of hazards.
		5.2	Electric power leads run out to power supply and supported overhead clear of traffic or covered if presenting possible trip hazard.
		5.3	Electric power leads connected to supply and power board or direct to power tool.
		5.4	Air hoses run out to compressed air supply and covered if presenting possible trip hazard.
		5.5	Hose connected to power tool and air supply.
6	Use power tools	6.1	Material located and held in position for power tool application where applicable.
		6.2	Power tools safely and effectively used in application processes.
		6.3	Power tools safely located when not in use.
7	Clean up	7.1	Power tools cleaned, maintained and stored.
		7.2	Power leads/hoses cleaned, visually checked and stored.
		7.3	Equipment cleaned, maintained and stored.
		7.4	Work area cleared and waste removed.

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RANGE STATEMENT

Hand tools include, but are not limited to:

- adjustable spanners
- bars (crow and pinch)
- bolt cutters
- brooms
- chisels
- hacksaws
- handsaws
- hammers
- measuring tapes
- nips
- picks/mattocks
- pliers
- sealant gun
- shovel/spades
- sledge hammers
- spanners and wrenches
- spirit level, straight edge
- string lines
- trowels and floats
- wire cutters
- paint brushes/rollers
- spatula/putty knives

Power supply to include but not limited to:

- electricity
- compressed air

Power tools include:

- drills
- nail guns
- staplers
- screwdrivers
- sanders
- angle grinders
- pneumatic wrenches
- circular saw
- jig saws
- planers
- routers

Personal protective equipment may include:

- overalls
- boots
- hard hat/cap
- safety glasses/goggles
- gloves
- ear plugs/muffs
- face masks/respirators

OH&S requirements may include:

- workshop/worksite safe working practices
- use of tools and equipment
- use of power tools
- safe handling and storage of materials

Reporting of faults may be verbal or written.

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EVIDENCE GUIDE

Competency is to be demonstrated by the safe and effective ope ration of particular power and hand tools listed within the range of variables statement relevant to the work orientation.

(1) Critical Aspects of Evidence

It is essential that competence be observed in the following aspects:

- demonstrate compliance with Occupational Health and Safety regulations applicable to workplace operations
- indicate compliance with organisational policies and procedures including Quality Assurance requirements
- adopt and carry out correct procedures prior to and during use of hand tools and power tools
- demonstrate safe and effective operational use of tools and equipment
- interactively communicate with others to ensure safe and effective operations

(2) Pre-requisite Relationship of Units

Competency in this unit may be determined c oncurrently based upon integrated project work using the following units:

• BCGCOR0011A	Carry out OH&S requirements
• BCGCOR0061A	Use plant and equipment
• BCGCOR0041A	Carry out measurements and calculations
• BCGCOR0111A	Handle construction materials and safe disposal of waste
• BCGMAS0121A-BCGPAD0191A	Prepare for the construction process (relative to work orientation)

(3) Underpinning Knowledge and Skills

Knowledge
Knowledge of:

- workplace and equipment safety requirements and OH&S legislat ion
- portable power tools
- hand tools and equipment
- materials
- materials handling whilst operating tools

Skills
The ability to:

- work safely to instructions
- apply appropriate hand-eye co-ordination in the use of tools
- handle/hold materials during operation of tools
- select appropriate tools for material usage
- communicate effectively

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(4) Resource Implications

The following resources should be made available:

- general construction materials
- hand and power tools appropriate to the construction process
- plant and equipment appropriate to the construction process
- suitable work area appropriate to the construction process
- appropriate OH&S safety resources

(5) Method of Assessment

Competency shall be assessed while work is being done under direct supervision w ith regular checks, but may include some autonomy when working as part of a team.

Assessment may be by intermittent checking at the various stages of the job application in accordance with the performance criteria.

(6) Context of Assessment

Competency should be assessed in the workplace or simulated workplace environment in accordance with work practices and safety procedures .

CRITICAL EMPLOYABILITY SKILLS

Three levels of performance denote level of competency required to perform a task. These level s do not relate to the NCTVET Qualifications Framework. They relate to the seven areas of generic competency that underpin effective workplace practices.

Levels of Competency		
Level 1	Level 2	Level 3
• Carries out established processes • Makes judgement of quality using given criteria	• Manages process • Selects the criteria for the evaluation process	• Establishes principles and procedures • Evaluates and reshapes process • Establishes criteria for evaluation

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Collect, analyse and organise information	Level 1	
Communicate ideas and information	Level 1	
Plan and organise activities	Level 2	
Work with others and in team	Level 1	
Use mathematical ideas and techniques	Level 2	
Solve problems	Level 1	
Use technology	Level 1	

Please refer to the Assessment Guidelines for advice on how to use the Critical Employability Skills.

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BCGCOR0061A: Use small plant and equipment

Competency Descriptor: This unit deals with the skills and knowledge required to safely and efficiently operate small construction plant and equipment, and applies to individuals working with ancillary equipment operation/masonry in the construction industry.

Competency Field: General Construction

ELEMENT OF COMPETENCY	PERFORMANCE CRITERIA
1. Identify plant and equipment, their operations and safety requirements	1.1 Types and function of plant/equipment used in construction process identified.
	1.2 Method of operation of plant/equipment identified and understood, relative to manufacturer's recommendations.
	1.3 Occupational Health and Safety (OH&S) requirements for guarding and cut off switches identified.
	1.4 OH&S requirements for personal protective equipment associated with using machines identified.
2. Select plant and equipment	2.1 OH&S requirements for operating and using plant and equipment recognised and adhered to.
	2.2 Appropriate personal protective equipment selected, correctly fitted and used.
	2.3 Plant and equipment selected consistent with needs of job.
	2.4 Plant and equipment checked for serviceability/safety and faults reported to supervisor.
3. Use plant and equipment	3.1 Plant and equipment safely and effectively used.
	3.2 Site hazards identified in use of plant and equipment and correct procedures used to eliminate or minimise risk.
	3.3 Plant and equipment safely located when not in immediate use.

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4. Clean up	4.1 Plant and equipment cleaned, maintained and stored.

RANGE STATEMENT

This unit applies to all small plant and equipment used in construction work

Plant and equipment includes but is not limited to:

- air compressor and hoses
- concrete mixer
- industrial wet and dry vacuum cleaner
- pallet trolley
- rollers
- compactors
- pumps and hoses
- brick/masonry saw
- terrazzo grinders
- ladders
- trestles and planks
- wheelbarrows

Personal protective equipment may include:

- overalls
- boots
- hard hat/cap
- safety glasses/goggles
- gloves
- ear plugs/muffs
- face masks/respirators

OH&S requirements are to be in accordance with relevant Statutory regulations, which may include:

- workshop/worksite safety practices
- control of noise and dust
- use of ladders and working platforms
- control of exhaust emission
- isolation of work areas

Reporting of faults may be written or verbal.

EVIDENCE GUIDE

Competency is to be demonstrated by the safe and effective operation of particular plant and equipment listed within the range of variable s statement relevant to the work orientation.

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(1) Critical Aspects of Evidence

It is essential that competence be observed in the following aspects:

- demonstrate compliance with Occupational Health and Safety regulations applicable to workplace operations
- indicate compliance with organisational policies and procedures including Quality Assurance requirements
- carry out correct procedures prior to and during application of processes
- demonstrate safe and effective operational use of tools, plant and equipmen t
- demonstrate and show understanding of manufacturer's specifications and recommendations
- interactively communicate with others to ensure safe and effective workplace operations

(2) Pre-Requisite Relationship of Units

- Nil

(3) Underpinning Knowledge and Skills

Knowledge
Knowledge of:

- workplace and equipment safety requirements
- portable power tools applicable to the construction process
- hand tools and a range of plant and equipment
- materials handling relevant to plant and equipment use
- workplace communication processes

Skills
The ability to:

- work safely to instructions
- use power tools, hand tools, plant and equipment applicable to the construction process
- communicate effectively

(4) Resource Implications

The following resources should be made available:

- hand and power tools appropriate to the construction process
- plant and equipment appropriate to the construction process
- suitable work area appropriate to the construction process
- appropriate OH&S safety resources

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(5) Method of Assessment

Competency should be assessed while work is being done under direct supervision with regular checks, but may include some autonomy when working as part of a team.

Competency in this unit may be determined concurrently, based on integrated project work.

Assessment may be by intermittent checking at the various stages of the job application in accordance with the performance criteria.

(6) Context of Assessment

Competency should be assessed in the workplace or simulated workplace environment in accordance with work practices and safety procedures.

CRITICAL EMPLOYABILITY SKILLS

Three levels of performance denote level of competency required to perform a task. These levels do not relate to the NCTVET Qualifications Framework. They relate to the seven areas of generic competency that underpin effective workplace practices.

Levels of Competency		
Level 1.	Level 2.	Level 3.
• Carries out established processes • Makes judgement of quality using given criteria	• Manages process • Selects the criteria for the evaluation process	• Establishes principles and procedures • Evaluates and reshapes process • Establishes criteria for evaluation

Collect, analyse and organise information	Level 1	
Communicate ideas and information	Level 1	
Plan and organise activities	Level 1	
Work with others and in team	Level 1	
Use mathematical ideas and techniques	Level 1	
Solve problems	Level 1	
Use technology	Level 1	

Please refer to the Assessment Guidelines for advice on how to use the Critical Employability Skills.

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BCGCOR0071A: Erect and dismantle restricted height scaffolding

Competency Descriptor: This unit deals with the skills and knowledge required to effectively and safely erect and dismantle scaffolding at specified height (not exceeding 4 meters), and applies to individuals working at elevated positions in the building and construction industry.

Competency Field: General construction

ELEMENT OF COMPETENCY		PERFORMANCE CRITERIA	
1.	Plan and prepare work	1.1	Occupational Health and Safety (OH&S) requirements for tasks and workplace environment recognised and adhered to.
		1.2	Location and scope of scaffolding/equipment determined from job drawings or supervisor's instructions.
		1.3	Appropriate personal protective equipment selected, correctly fitted and used.
		1.4	Tools and equipment selected consistent with job requirements, checked for serviceability and any faults reported to supervisor.
		1.5	Scaffolding/equipment components selected consistent with requirements of job.
2.	Erect safety barriers	2.1	Safety barriers erected, where applicable, to isolate site work area.
		2.2	Relevant signage installed where required to OH&S requirements.
3.	Erect scaffolding	3.1	All work undertaken safely and to supervisor's prescribed procedures.
		3.2	Erection site prepared to meet job requirements.
		3.3	Necessary signage prepared to meet job requirements.
		3.4	Scaffolding/equipment erected to plan in accordance with safe work practices, OH&S and manufacturers requirements.

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4.	Dismantle scaffolding	4.1	Work undertaken safely and according to reverse procedures for erecting.
		4.2	Scaffolding/equipment dismantled in accordance with site procedures and critical structural safety requirements.
5.	Clean up	5.1	Site cleaned and cleared of all tools, excess mat erial and waste and left in safe condition.
		5.2	Tools and equipment cleaned, maintained and stored.

RANGE STATEMENT

This unit applies to the erection of scaffolding up to 4m in height, which must be constructed in accordance with:

- Guidelines for Scaffolding, and
- General requirements for erecting scaffolding

Personal protective equipment may include:

- overalls
- jacket
- boots
- hard hat
- safety glasses
- gloves
- ear plugs/muffs
- dust masks

Tools and equipment may include:

- spanners
- shovels
- hammers
- picks
- crow bars
- ladders

The range of scaffolding equipment associated with
this unit includes:

- standing prefabricated tower scaffolds
- tube and fitting scaffolds to 4 metres height
- fall protection devices
- catch platforms
- bracket scaffolds

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Work is to be undert aken in accordance with statutory regulatory and legislative requirements for Occupational Health and Safety. Work must be supervised and undertaken in a team situation.

Supervision instruction may involve:

- verbal direction/instruction
- written instruction
- provision of sketch/drawing and details

Reports of faults may be verbal or written.

EVIDENCE GUIDE

Competency is to be demonstrated by the safe and effective erection and dismantling of different types of restricted height scaffolding listed within t he range of variables statement relevant to the work orientation.

(1) Critical Aspects of Evidence

It is essential that competence be observed in the following aspects:

- demonstrate compliance with Occupational Health and Safety regulations applicable to workplace operations
- indicate compliance with organisational policies and procedures including Quality Assurance requirements
- carry out correct procedures prior to and during application of construction process
- demonstrate safe and effective operational u se of scaffolding tools and equipment
- erect scaffolding plumb and brace for stability
- interactively communicate with others to ensure safe and effective erection and dismantling operations

(2) Pre-requisite Relationship of Units

- BCGCOR0011A Carry out OH&S requirements
- BCGCOR0051A Use hand and power tools

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(3) Underpinning Knowledge and Skills

Knowledge
Knowledge of:

- workplace and equipment safety requirements
- scaffolding and basic working platforms
- hand tools
- materials
- materials handling
- vertical and horizontal triangular concepts

Skills
The ability to:

- work safely to instructions
- use hand tools
- handle material
- select material
- communicate effectively

(4) Resource Implications

The following resources should be made available:

- construction materials appropriate for scaffolding
- hand tools and equipment appropriate to the construction process
- suitable work area appropriate to the construction process
- information on OH&S requirements

(5) Method of Assessment

Competency shall be assessed while work is being done under direct supervision with regular checks, but may include some autonomy when working as part of a team.

Competency in this unit may be determined concurrently, based on integrated project work.

Assessment may be by intermittent checking at the various stages of the job application in accordance with the performance criteria, or may be at the completion of the process.

(6) Context of Assessment

Competency should be assessed in the workplace or simulated workplace environmen t in accordance with work practices and safety procedures.

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CRITICAL EMPLOYABILITY SKILLS

Three levels of performance denote level of competency required to perform a task. These levels do not relate to the NCTVET Qualifications Framework. They relate to the seven areas of generic competency that underpins effective workplace practices.

Levels of Competency		
Level 1	Level 2	Level 3
• Carries out established processes • Makes judgement of quality using given criteria	• Manages process • Selects the criteria for the evaluation process	• Establishes principles and procedures • Evaluates and reshapes process • Establishes criteria for evaluation

Collect, analyse and organise information	Level 1	
Communicate ideas and information	Level 1	
Plan and organise activities	Level 1	
Work with others and in team	Level 1	
Use mathematical ideas and techniques	Level 1	
Solve problems	Level 1	
Use technology	Level 1	

Please refer to the Assessment Guidelines for advice on how to use the Critical Employability Skills .

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BCGCOR0081A: Use simple levelling devices

Competency Descriptor: This unit deals with the skills and knowledge required to competently select and use levelling devices, and applies to individuals working in the building and Construction industry.

Competency Field: General Construction

ELEMENT OF COMPETENCY		PERFORMANCE CRITERIA	
1	Plan and prepare work	1.1	Occupational Health and Safety (OH&S) requirements recognised and adhered to in accordance with application tasks and workplace environment.
		1.2	Requirements of job identified from drawings or instructions.
		1.3	Appropriate personal protective equipment selected, correctly fitted and used.
		1.4	Tools and equipment selected consistent with job requirements, checked for serviceability and any faults reported to supervisor.
		1.5	Quality Assurance requirements recognised and adhered to in accordance with company's construction operations.
2	Set up and use levelling device	2.1	Heights to be transferred identified from given instructions or drawings.
		2.2	Device assembled and filled with water to required level with air bubbles removed.
		2.3	Height transferred to required locations to a tolerance of + or - 5mm over 3 metres.
3	Transfer heights with straight edge and spirit level	3.1	Heights to be transferred identified from given instructions/drawings or given marked level.
		3.2	Height transferred to required location to + or - 5mm over 3 metres.
4	Maintain given level or specified slope with boning rods	4.1	Heights of each end of line to be boned established to given levels.

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		4.2	End of boning rods securely fixed to required heights.
		4.3	Heights of intermediate points sighted and marked with boning rods to a tolerance of + 10mm.
5	Clean-up	5.1	Tools and equipment cleaned, maintained and stored.

RANGE STATEMENT

This unit applies to using simple levelling devices to carry out basic exercises in transferring levels and/or maintaining a line of a slope.

Levelling and lining devices include:

- water level
- spirit level
- boning rods
- line level

Heights or levels may be given by:

- drawing/sketch indicating mark
- verbal or written instruction indicating level or mark
- datum/survey peg fixed into ground
- chalk or nail mark on paved/concrete surface
- mark on vertical surface

Associated tools and equipment include:

- string line
- wooden/steel pegs
- straight edge
- hammer
- chalk line

Personal protective equipment may include:

- overalls
- boots
- hard hat/cap
- safety glasses
- dust jacket
- masks/respirators

Work may be carried out under supervision and in a team situation or individually.

Reporting of faults may be verbal or written.

EVIDENCE GUIDE

Competency is to be demonstrated by carrying out the effective application of the different types of levelling devices listed within the range statement relative to the work orientation.

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(1) Critical Aspects of Evidence

It is essential that competence be observed in the following aspects:

- demonstrate compliance with Occupational Health and Safety regulations applicable to workplace operations
- indicate compliance with organisational policies and procedures including Quality Assurance requirements
- carry out correct procedures prior to and during application of levelling and boning processes
- demonstrate safe and effective handling and operational use of levelling device
- indicate care in accurately transferring levels to other locations
- interactive communication with others to ensure safe and effective levelling operations.

(2) Pre-requisite Relationship of Units

- Nil

(3) Underpinning Knowledge and Skills

Knowledge
Knowledge of:

- workplace and equipment safety requirements
- hand tools
- measurement and calculation
- Quality Assurance
- range of levelling devices
- horizontal/vertical concepts

Skills
The ability to:

- work safely to instructions
- measure accurately
- use hand tools
- communicate effectively

(4) Resource Implications

The following resources should be made available:

- general construction materials appropriate to levelling
- hand tools appropriate to levelling and lining
- equipment appropriate to the activity processes
- suitable work area appropriate to the activities
- suitable plans/drawings and specification

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(5) Method of Assessment

Competency should be assessed while work is being don e, under direct supervision with regular checks, but may include some autonomy when working as part of a team.

Competency in this unit should be determined concurrently, based on integrated project work.

Assessment may be by intermittent checking at the various stages of the job application in accordance with the performance criteria, or may be at the completion of each process.

(6) Context of Assessment

Competency should be assessed in the workplace or simulated workplace environment in accordance with work practices and safety procedures.

CRITICAL EMPLOYABILITY SKILLS

Three levels of performance denote level of competency required to perform a task. These levels do not relate to the NCTVET Qualifications Framework. They relate to the seven areas o f generic competency that underpin effective workplace practices.

Levels of Competency		
Level 1.	Level 2	Level 3.
• Carries out established processes • Makes judgement of quality using given criteria	• Manages process • Selects the criteria for the evaluation process	• Establishes principles and procedures • Evaluates and reshapes process • Establishes criteria for evaluation

Collect, analyse and organise information	Level 1	
Communicate ideas and information	Level 1	
Plan and organise activities	Level 1	
Work with others and in team	Level 1	
Use mathematical ideas and techniques	Level 1	
Solve problems	Level 1	
Use technology	Level 1	

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BCGMAS0101A: Carry out concreting to simple forms

Competency Descriptor: This unit deals with the skills and knowledge required to effectively and safely carry out concreting to simple formwork, and applies to all individuals working in the preparation and placing of formwork and concrete.

Competency Field: General Construction

ELEMENT OF COMPETENCY	PERFORMANCE CRITERIA
1. Select tools and equipment	1.1 Quality Assurance requirements recognised and adhered to in accordance with company's construction operations.
	1.2 Occupational Health and Safety (OH&S) requirements recognised and adhered to in accordance with application tasks and workplace environment.
	1.3 Appropriate personal protective equipment selected, correctly fitted and used.
	1.4 Tools and equipment selected to instructions consistent with job requirements checked for serviceability and any faults reported to supervisor.
2. Erect and strip simple formwork	2.1 Design of formwork identified from drawings/supervisors instructions.
	2.2 Formwork safely erected on commencement and stripped on completion under direction of supervisor.
	2.3 Stripping agent applied to erected formwork, where appropriate.
	2.4 Timber components denailed following stripping of formwork.
	2.5 All components cleaned, stacked and stored for re-use or bundled for removal.
3. Place and tie reinforcement	3.1 Reinforcing components safely handled and carried to required position.
	3.2 Reinforcing bars, rods, stirrups and mesh positioned under supervisor's directions.
	3.3 Bar chairs and spacers located in place, checking minimum edge cover under the direction of supervisor.

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4.	Place concrete	4.1 Formwork/excavation cleaned of excess material and debris prior to concrete placement.
		4.2 Concrete correctly proportioned and mixed and/or safely transported by wheelbarrow and placed under direction.
		4.3 Pump line/chute controlled and concrete placed as directed.
		4.4 Concrete spread as directed to specified leve ls.
		4.5 Concrete consolidated under direction and screeded to finished levels as directed.
		4.6 Surface of concrete finished as directed to specified finish.
5.	Clean up	5.1 Formwork components removed from site.
		5.2 Pour site and surrounds cleare d of concrete spills and other debris and surface left in safe condition.
		5.3 Worksite cleared of debris and unused materials.
		5.4 Tools and equipment cleaned, maintained and stored.

RANGE OF STATEMENT

This unit applies to placing concrete to simpl e forms and excavations which includes:

- post holes
- trench foundations
- pad foundations
- slabs
- pathways
- simple concrete aprons
- channels
- garden edges

Formwork in this unit applies to edging forms where structural components would include:

- edge boards
- pegs
- struts
- bracing

Personal protective equipment may include:

- overalls
- boots
- hard hat/cap
- safety glasses/goggles
- gum boots
- face masks
- waterproof pants and jacket

Concrete finishes include:

- wood floated
- steel floated
- broom brushed

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Excess material and debris includes:

- excavated loose soil
- off cut timber
- paper
- rags
- sticks
- nails

Concrete placement methods include:

- shovel
- wheelbarrow
- chute
- pump line

Work is to be undertaken in a team situation or individually under supervision.

Reporting of faults may be verbal or written.

OH&S requirements are in accordance with Statutory requirements.

EVIDENCE GUIDE

Competency is to be demonstrated by the safe installation of formwork, reinforcement and concrete using any two of the simple forms listed within the ran ge statement relevant to the work orientation.

(1) Critical Aspects and Evidence

It is essential that competence be observed in the following aspects:

- demonstrate compliance with Occupational Health and Safety regulations applicable to workplace operations
- indicate compliance with organisational policies and procedures including Quality Assurance requirements
- carry out correct procedures prior to and during construction processes
- demonstrate safe and effective operational use of tools, plant and equipmen t
- interactively communicate with others to ensure safe and effective operations

(2) Pre-requisite Relationship of Units

- BCGCOR0011A Carry out OH&S requirements
- BCGCOR0051A Use hand and power tools
- BCGCOR0061A Use small plant and equipment

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(3) Underpinning Knowledge and Skills

Knowledge
Knowledge of:

- workplace and equipment safety requirements
- hand tools and equipment
- concrete and formwork materials
- materials handling
- measurement and proportion
- transporting and placing concrete
- levelling equipment
- simple formwork and reinforcement components
- select and handle materials appropriate to concreting processes

Skills
The ability to:

- work safely to instructions
- measure relative to the concreting process
- use power tools and hand tools
- mix concrete by hand
- use simple levelling equipment
- communicate effectively
- select and handle materials appropriate to concreting processes

(4) Resource Implications

The following resources should be made available:

- general construction materials relevant to forming, re inforcing and placement of concrete
- hand tools and power tools appropriate to construction process
- tools and equipment appropriate to construction process
- suitable work area appropriate to concreting process
- information relevant to OH&S requirements

(5) Method of Assessment

Competency shall be assessed while work is being done under direct supervision with regular checks, but may include some autonomy when working as part of a team.

Competency in this unit may be determined concurrently, based on inte grated project work.

Assessment may be by intermittent checking at the various stages of the job application in accordance with the performance criteria.

(6) Context of Assessment

Competency should be assessed in the workplace or simulated workplace environment in accordance with work practices and safety procedures.

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CRITICAL EMPLOYABILITY SKILLS

Three levels of performance denote level of competency required to perform a task. These levels do not relate to the NCTVET Qualifications Framework. They relate to the seven areas of generic competency that underpin effective workplace practices.

Levels of Competency		
Level 1.	Level 2.	Level 3.
• Carries out established processes • Makes judgement of quality using given criteria	• Manages process • Selects the criteria for the evaluation process	• Establishes principles and procedures • Evaluates and reshapes process • Establishes criteria for evaluation

Collect, analyse and organise information	Level 1	
Communicate ideas and information	Level 1	
Plan and organise activities	Level 1	
Work with others and in team	Level 1	
Use mathematical ideas and techniques	Level 1	
Solve problems	Level 1	
Use technology	Level 1	

Please refer to the Assessment Guidelines for advice on how to use the Critical Employability Skills.

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BCGCOR0111A: Handle construction materials and safely dispose of waste

Competency Descriptor: This unit deals with the skills and knowledge required to effectively and safely handle construction materials, and to dispose of waste in a safe and environment friendly manner. It applies to individuals working in the construction industry.

Competency Field: General Construction

ELEMENT OF COMPETENCY		PERFORMANCE CRITERIA	
1	Plan and prepare work	1.1	Occupational Health and Safety (OH&S) requirements associated with application tasks and workplace environment recognised and adhered to.
		1.2	Appropriate personal protective equipment selected, correctly fitted and used.
		1.3	Quality Assurance requirements associated with company's construction operations recognised and adhered to.
		1.4	Tools and equipment for handling materials/goods, non-toxic waste, selected consistent with job requirements, checked for serviceability and any faults reported to supervisor.
2	Correctly manual handle, sort and stack construction material	2.1	Common construction materials recognised and selected for sorting and stacking/stockpiling to supervisor's instructions and/or specifications.
		2.2	Handling characteristics of materials identified and appropriate handling techniques applied.
		2.3	Specific handling requirements for hazardous materials applied.
		2.4	Materials stored, stacked/stockpiled and protected, clear of traffic ways, so they are easily identified, retrieved and not damaged.
		2.5	Appropriate signage and barricades erected where applicable to isolate stored materials from workplace traffic or access.
		2.6	Correct manual handling techniques used.

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3	Prepare for mechanical handling of materials	3.1	Materials stacked/banded for mechanical handling in accordance with type of material and plant/equipment to be used.
		3.2	Dogman/rigger assisted with loading, unloading, moving, locating and/or installing materials.
		3.3	Materials safely handled with assistance of pallet trolley, forklift or hoist.
4	Handle and remove waste safely	4.1	Waste materials handled correctly and safely according to MSDS and requirements of regulatory authorities.
		4.2	Hazardous material identified for separate handling.
		4.3	Non-toxic materials removed using correct procedures.
		4.4	Dust suppression procedures used to minimise health risk to work personnel and others.
5	Clean up	5.1	Tools and equipment cleaned, maintained, and stored.
		5.2	Unused materials safely stacked/stockpiled stored.
		5.3	Waste materials disposed of safely.
		5.4	Site cleaned and cleared of debris and unwanted material.

RANGE STATEMENT

Tools and equipment includes but is not limited to:

- brooms
- hoses
- shovels
- rakes
- wet and dry industrial vacuum cleaners
- wheelbarrows
- pallet trolley
- materials hoists
- forklifts

Construction materials include but are not limited to:

- bricks and concrete masonry
- mortar components – cement, coarse aggregate, sand
- timber
- structural steel sections/components
- concrete
- scaffolding components, pipe sections
- plywood and particle board
- metal sheeting
- steel reinforcement
- insulation
- glass
- paints and sealants
- plaster sheeting

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Protection of stacked/stored materials may include:

- covering
- tying or banding
- barricades
- signs
- locked away (hazardous materials)

Dust suppression procedures may include:

- spraying with water
- covering
- use of vacuum cleaner

Waste material and debris include but are not limited to:

- banding straps
- packing pieces
- broken or damaged goods
- cardboard
- plastic
- paper
- loose material

Removal of materials to include processes of recycling and salvage where applicable.

OH&S requirements to be in accordance with (Statutory/Territory) legislation and regulations.

Work to be undertaken as part of a team or individually under supervision of appropriatel y certificated persons where applicable.

Reporting of faults may be verbal or written.

EVIDENCE GUIDE

Competency is to be demonstrated by the effective handling and storing/stacking of appropriate construction materials listed within the range of variabl es statement, relevant to the work orientation.

(1) Critical Aspects and Evidence

It is essential that competence is observed in the following aspects:

- demonstrate compliance with Occupational Health and Safety regulations and State/Territory legislation applicable to workplace operations
- indicate compliance with organisational policies and procedures including Quality Assurance requirements
- carry out correct procedures prior to and during application of materials handling processes
- demonstrate safe and effective operational use of tools and equipment
- demonstrate safe application in the process of cleaning up
- interactively communicate with others to ensure safe and effective operations

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(2) Pre-requisite Relationship of Units

- Nil

(3) Underpinning Knowledge and Skills

Knowledge
Knowledge of:

- workplace and equipment safety requirements including relevant codes and regulation
- hand tools and equipment
- materials
- materials handling
- Quality Assurance
- range of communication mediums (verbal and non-verbal)

Skills
The ability to:

- work safely to instructions
- use hand tools
- handle materials
- select material
- measure
- communicate effectively

(4) Resource Implications

The following resources should be made available:

- general construction materials relative to construction processes
- plant and equipment appropriate to handling processes
- hand tools appropriate to handling processes
- suitable work area appropriate to construction process
- MSDS information

(5) Method of Assessment

Competency shall be assessed while work is being done under direct supervision with regular checks, but may include some autonomy when working as part of a team.

Competency in this unit may be determined concurrently, based on integrated project work.

Assessment may be by intermittent checking at the various stages of the job application in accordance with the performance criteria, or may be at the completion of each process.

(6) Context of Assessment

Competency shall be assessed in the workplace or simulated workplace environment in accordance with work practices and safety procedures.

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CRITICAL EMPLOYABILITY SKILLS

Three levels of performance denote level of competency required to perform a task. These levels do not relate to the NCTVET Qualifications Framework. They relate to t he seven areas of generic competency that underpin effective workplace practices.

Levels of Competency		
Level 1.	Level 2.	Level 3.
• Carries out established processes • Makes judgement of quality using given criteria	• Manages process • Selects the criteria for the evaluation process	• Establishes principles and procedures • Evaluates and reshapes process • Establishes criteria for evaluation

Collect, analyse and organise information	Level 1	
Communicate ideas and information	Level 1	
Plan and organise activi ties	Level 1	
Work with others and in team	Level 1	
Use mathematical ideas and techniques	Level 1	
Solve problems	Level 1	
Use technology	Level 1	

Please refer to the Assessment Guidelines for advice on how to use the Critical Employability Skills.

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ITICOR0011A: Carry out data entry and retrieval procedures

Competency Descriptor: This unit deals with the skills and knowledge required to operate computer to enter, manipulate and retrieve data and to access information and communicate via the Internet.

Competency Field: Information Technology and Communications - Operations

ELEMENT OF COMPETENCY		PERFORMANCE CRITERIA	
1.	Initiate computer system	1.1	Equipment and work environment are correctly checked for readiness to perform scheduled tasks.
		1.2	The hardware components of the computer and their functions are correctly identified.
		1.3	Equipment is powered up correctly.
		1.4	Access codes are correctly applied.
		1.5	Appropriate software is selected or loaded from the menu.
2.	Enter data	2.1	Types of data for entry correctly identified and collected.
		2.2	Input devices selected and used are appropriate for the intended operations.
		2.3	Manipulative procedures of Input device conform to established practices.
		2.4	Keyboard/mouse is operated within the designated speed and accuracy requirements.
		2.5	Computer files are correctly located or new files are created, named and saved.
		2.6	Data is accurately entered in the appropriate files using specified procedure and format.
		2.7	Data entered is validated in accordance with specified procedures.
		2.8	Anomalous results are corrected or reported in accordance with specified procedures.
		2.9	Back-up made in accordance with operating procedures.

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3.	Retrieve data	3.1	The identity and source of information is established.
		3.2	Authority to access data is obtained where required.
		3.3	Files and data are correctly located and accessed.
		3.4	Integrity and confidentiality of data are maintained.
		3.5	The relevant reports or information retrieved using approved procedure.
		3.6	Formats to retrieved report or information conform to that required.
		3.7	Copy of the data is printed where required.
4.	Amend data	4.1	Source of data/information for amendment is established.
		4.2	Data to be amended is correctly located within the file.
		4.3	The correct data/Information is entered, changed or deleted using appropriate input device and approved procedures.
		4.4	The Integrity of data is maintained.
5.	Use document layout and data format facilities	5.1	Requirements for document are verified where necessary.
		5.2	The given format and layout are appropriately applied.
		5.3	Facilities to achieve the desired format and layout are correctly identified, accessed and used.
		5.4	Data manipulating facilities are used correctly.
		5.5	Format reflects accuracy and completeness.
6.	Monitor the operation of equipment	6.1	The system is monitored to ensure correct operation of tasks.
		6.2	Routine system messages are promptly and correctly dealt with.
		6.3	Non-routine messages are promptly referred in accordance with operating requirements.

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		6.4	Error conditions within level of authority are dealt with promptly, and uncorrected errors are promptly reported.
		6.5	Output devices and materials are monitored for quality.
7.	Access and transmit information via the Internet	7.1	Access to the Internet is gained in accordance with the provider's operating procedures.
		7.2	Evidence of the ability to negotiate web sites to locate and access specified information and other services is efficiently demonstrated.
		7.3	E-Mail is sent and retrieved competently.
8.	Close down computer system	8.1	The correct shut down sequence is followed.
		8.2	Problem with shutting down computer is reported promptly.
		8.3	All safety and protective procedures are observed.
		8.4	The system integrity and security are preserved.
9.	Maintain computer equipment	9.1	Cleaning materials and/or solutions used meet specified recommendation.
		9.2	The equipment is cleaned as directed.
		9.3	Wear and faults identified are promptly reported to the appropriate personnel.

RANGE STATEMENT

This unit applies to activities associated with essential operations linked to using and maintaining basic computer equipment.

Equipment:

- install supplied computer
- install supplied peripherals

Work environment:

- equipment
- furniture
- cabling
- power supply

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Input devices:

- keyboard
- mouse
- scanner
- microphone
- camera

Software systems to include for:

- word processing
- spread sheet
- internet access

Files save on:

- network
- magnetic media
- personal PC

Data:

- textual
- numerical
- graphical

File operations:

Naming, updating, archiving, traversing field and records in database, use of search, sort, print

Maintenance:

- cleaning: enclosures, screen, input devices, output devices
- checking cables, etc

EVIDENCE GUIDE

Competency is to be demonstrated by the ability to accurately carry out basic data entry and retrieva l operations on a computer system in accordance with the performance criteria and the range listed within the range of variables statement .

(1) Critical Aspects and Evidence

It is essential that competence be observed in the following aspects:

- Initiate the use on the equipment.
- Use document layout and data format facilities.
- Locate and access data.
- Use file operations.
- Manipulate input devices.
- Key-in and format reports.
- Access to the internet.

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(2) Pre-requisite Relationship of Units

The pre-requisite for this unit is:

- Nil

(3) Underpinning Knowledge and Skills

Knowledge
knowledge of:

- safety for working with and around computers
- computer hardware and software systems
- procedure for initiating and closing down computer
- the operation of the data entry management system
- methods of locating files
- organisation's standards applicable to accessing files
- files operations and their applications
- file operation in database setting
- creating, locating and saving files
- using input devices
- using data checking devices
- formatting functions of software
- layout function of software
- graphic productions and manipulation
- regard for accuracy and security of information
- functions on the internet

Skills
The ability to:

- identify computer hardware
- manipulate data input devices
- access data
- use file operations
- key-in and format reports and letters
- retrieve data
- amend data
- print data
- save data
- search and receive data from the internet
- send and receive E-Mail

(4) Resource Implications

Files saved on network, magnetic media, personal Computer

Input devices: Keyboard, mouse, other selection devices

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(5) Method of Assessment

Competency shall be assessed while work is undertaken under direct supervision with regular checks, but may include some autonomy when working as part of a team.

Competencies in this unit may be determined concurrently. Assessment must be in accordance with the performance criteria.

(6) Context of Assessment

This unit may be assessed on or off the job. Assessment should include practical demonstration either in the workplace or through a simulation. A range of methods to assess underpinning knowledge should support this

CRITICAL EMPLOYABILITY SKILLS

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Levels of Competency		
Level 1.	Level 2.	Level 3.
• Carries out established processes • Makes judgement of quality using given criteria	• Manages process • Selects the criteria for the evaluation process	• Establishes principles and procedures • Evaluates and reshapes process • Establishes criteria for evaluation

Collect, analyse and organise information	Level 1	
Communicate ideas and information	Level -	
Plan and organise activities	Level 1	
Work with others and in team	Level 1	
Use mathematical ideas and techniques	Level 1	
Solve problems	Level 1	
Use technology	Level -	

Please refer to the Assessment Guidelines for advice on how to use the Critical Employability Skills.

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BCGCOR0212A: Prepare surfaces

Competency Descriptor: This unit deals with the skills and knowledge required to effectively prepare the range of surfaces for various finishing applications, and applies to individuals working in the preparatory phase of surface finishing in the construction industry.

Competency Field: General Construction

ELEMENT OF COMPETENCY	PERFORMANCE CRITERIA
1. Plan and prepare work	1.1 Quality Assurance requirements of company's construction operations recognised and adhered to.
	1.2 Preparation requirements identified from drawings, work area and instructions/specifications extract.
	1.3 OH&S requirements recognised and adhered to in accordance with the application tasks and workplace environment.
	1.4 Appropriate personal protective equipment selected, correctly fitted and used.
	1.5 Tools and equipment selected to carry out processes consistent with requirements of job are checked for serviceability and any faults reported to supervisor.
	1.6 Safety hazards identified and correct procedures used to minimise risk to self and others in accordance with OH&S workplace operations.
	1.7 Materials appropriate to job application selected, safely handled and stored/located ready for application.
2. Prepare work area for application processes	2.1 Hazards and attachments safely removed where applicable or arranged for removal from area.
	2.2 Work area prepared for application processes in accordance with finishing material and manufacturer's specifications.
3. Prepare surface by sanding/grinding	3.1 Correct abrasive disc/sheet or wheel selected in accordance with surface condition and work to be undertaken and fitted to sander/grinder.

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		3.2	Sander/grinder used and applied safely to surface in accordance with manufacturer's specifications and relevant OH&S requirements.
		3.3	All loose or protruding material removed by sander /grinder and brushing so that surface is prepared to specification.
4.	Patch holes	4.1	Method of patching hole determined from type of material surface, size of hole, compatibility of materials and planned specified finish.
		4.2	Patching materials selected to suit material surface and, where applicable, mixed to requirements of manufacturer's specifications.
		4.3	Colour patching materials checked to ensure that colour matches surrounding area, where applicable.
		4.4	Material applied to job and material according manufacturer's specifications using appropriate application method.
		4.5	Where applicable to type of patching material, patched areas must be sanded to provide flush and flat finish to surface.
		4.6	Surface brushed/scraped/washed clean of surplus material in accordance with type of patching material and material surface
		4.7	Patched areas sealed by application of prime or sealing coat, where applicable, to suit requirements of specified finishes.
5.	Stop and fill surface	5.1	Correct stopping material selected for specified surface, where applicable.
		5.2	Imperfections prepared and material applied to a flush and even finish, where applicable, to proposed additional surface application processes.
		5.3	Excess filler removed without damaging or marking surface.
		5.4	Surface fine-sanded and cleaned free of dust, where applicable for proposed applied finishes.

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6. Clean-up	6.1 Area cleaned free of debris.
	6.2 Waste and unwanted material disposed of safely using appropriate method according to National Environment Protection Act (NEPA) requirements.
	6.3 Unused materials stored.
	6.4 Tools and equipment cleaned, maintained and stored.

RANGE STATEMENT

This unit applies to the preparation of different material surfaces for the application of applied surface finishes or the abutting or attaching of a construction to that surface.

Surface preparation will vary in accordance with the types of materials to be applied to finish or seal surface and the type of construction, which is to abut or be attached to the surface.

Material surfaces include:

- timber
- plasterboard/plaster-glass
- masonry
- brick
- metal (ferrous and non-ferrous)
- concrete
- solid plaster
- plastic

Surface preparation for application finishes includes the preparation for:

- wall and floor tiling
- terrazzo
- segmental paving
- pre-cast cladding
- waterproofing/damp-roofing
- painting
- solid plastering
- wall papering
- clear timber finishes
- stone veneer
- sheet plastering or lining material

Surface preparation for construction applications of abutting or attaching to surfaces includes the preparation for:

- curtain walling fixing
- brick or block laying
- timber partition walls
- light steel partition walls
- formwork construction
- stair installation
- attachment of steel brackets or fabricated units
- aluminium framework fixing
- roof tiling and slating

Surfaces may be new or established material surfaces including both painted and unpainted surfaces.

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Personal protective equipment may include:

- overalls
- waterproof pants and jacket
- boots
- gumboots
- gloves
- hard hat/cap
- safety goggles
- ear plugs/muffs
- dust masks/respirators

Tools include but are not limited to:

- scrapers
- paint brushes
- wire brushes
- brooms
- sponges
- sanding blocks
- shovels
- power sanders
- power grinders
- filling blades
- chisels
- hammers

Equipment includes but is not limited to:

- electrical leads
- elevated work platforms
- trestles
- planks
- ladders
- buckets
- sanders
- hose and water spray

OH&S requirements to be in accordance with Statutory legislation and regulations and may include:

- workplace environment
- protective clothing and equipment
- working platforms
- use of tools and equipment
- control of hazardous substances
- hazard control

Work area preparation may include:

- clearing area
- setting up equipment for operation
- erecting scaffolding
- disconnecting and removing attachments from or against walls

Patching materials include but are not limited to:

- cellulose/plaster proprietary fillers
- plaster
- sand and cement
- cornice adhesive
- putty
- plastic wood
- fibreglass
- caulking compounds
- sheet material

Waste and debris may include:

- spilt patching material
- cleared or scraped old paint
- discarded abrasive discs/sheets
- cardboard
- paper
- dirt and dust
- disused containers

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Work is to be undertaken either as part of a team or individually under indirect supervision with instructions being verbal or written as part of supervisor's directions.

Instructions and reporting of faults may be verbal or written.

EVIDENCE GUIDE

Competency is to be demonstrated by the safe and effective preparation of at least three separate types of material surfaces from those listed within the range of variables statement relevant to the work orientation.

(1) Critical Aspects of Evidence

It is essential that competence be observed in the following aspects:

- demonstrate compliance with Occupational Health and Safety regulations applicable to workplace operations
- show compliance with organisational policies and procedures including Qual ity Assurance requirements
- adopt and carry out correct procedures prior to and during application of preparation processes
- demonstrate that finished patching of holes is flush and straight with surface within tolerances applicable to work orientation
- demonstrate safe and effective operational use of tools, plant and equipment
- interactively communicate with others to ensure safe and effective workplace operations
- prepare surface to specification or instruction requirements

(2) Pre-requisite Relationship of Units

Prerequisites for this unit are:

- BCGCOR0011A Carry out OH&S requirements
- BCGCOR0051A Use hand and power tools
- BCGCOR0061A Use small plant and equipment
- BCGCOR0071A Erect and dismantle restricted height scaffolding

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(3) Underpinning Knowledge and Skills

Knowledge
Knowledge of:

- workplace and equipment safety requirements
- portable power tools
- hand tools and equipment
- materials relevant to patching and preparation of surfaces
- materials handling
- measurement and calculation
- drawings and written ins tructions workplace communication

Skills
The ability to:

- work safely to instructions
- interpret drawing and instructions
- use power tools and hand tools
- handle material
- select material
- measure relative to the process
- communicate effectively

(4) Resource Implications

The following resources should be made available:

- general construction and patching materials relevant to surface preparation
- hand tools and power tools appropriate to application processes
- plant and equipment appropriate to application p rocesses
- suitable work area appropriate to surface preparation process

(5) Method of Assessment

Competency shall be assessed while work is being done under indirect supervision with regular checks, but may include some autonomy when working as part of a team.

Competency should be assessed through direct observation of application to tasks and questioning related to underpinning knowledge.

Assessment may be by intermittent checking at the various stages of the job application in accordance with the performance criteria, or may be at the completion of each process.

(6) Context of Assessment

Competency should be assessed in the workplace or simulated workplace environment in accordance with work practices and safety procedures.

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CRITICAL EMPLOYABILITY SKILLS

Three levels of performance denote level of competency required to perform a task. These levels do not relate to the NCTVET Qualification Framework. They relate to the seven areas of generic competency that underpin effective workplace practices.

Levels of Competency		
Level 1	Level 2	Level 3
• Carries out established processes • Makes judgement of quality using given criteria	• Manages process • Selects the criteria for the evaluation process	• Establishes principles and procedures • Evaluates and reshapes process • Establishes criteria for evaluation

Collect, analyse and organise information	Level 1	
Communicate ideas and information	Level 1	
Plan and organise activities	Level 1	
Work with others and in team	Level 1	
Use mathematical ideas and techniques	Level 1	
Solve problems	Level 1	
Use technology	Level 1	

Please refer to the Assessment Guidelines for advice on how to use the Critical Employability Skills.

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BCGCOR0242A: Carry out levelling

Competency Descriptor: This unit deals with the skills and knowledge required to effectively establish and transfer level from one reference point to another within given tolerance, and applies to individuals working in the construction industry.

Competency Field: General/Civil Construction

ELEMENT OF COMPETENCY	PERFORMANCE CRITERIA
1. Plan and prepare work	1.1 Occupational Health and Safety (OH&S) requirements associated with application tasks and worksite environment recognised and adhered to.
	1.2 Requirements of job identified from drawings and/or instructions.
	1.3 Relevant reduced levels obtained from given drawings/sketches and/or instruction.
	1.4 Appropriate personal protective equipment selected, correctly fitted and used.
	1.5 Levelling equipment and tools selected consistent with needs of job, checked for serviceability and any faults reported to supervisor.
2. Maintain given level or specified slope with boning rods	2.1 Heights of each end of line to be boned are established to levels from given drawings and/or instructions.
	2.2 End boning rods securely fixed to required heights.
	2.3 Heights of intermediate points sighted with boning rods and marked where applicable, to 10mm.
3. Set up and use levelling devices	3.1 Heights to be transferred/established are identified from given drawings/sketches and/or instructions.
	3.2 Level correctly set up for use in accordance to recommendations from manufacturer's operating manual.
	3.3 Levels shot and heights marked and/or recorded to job requirements to +/- 1mm over 10m.

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4.	Clean up	4.1 All equipment and tools cleaned, maintained and returned to store.
		4.2 Levelling equipment placed and secured in manufact urer's provided container.

RANGE STATEMENT

This unit applies to the use of levelling equipment to read and record levels in accordance with a given level, and to the use of boning rods to maintain or mark a set slope or level line.

Work is to be undertaken working with a partner under limited supervision.

Work applications are simple levelling tasks such as:

- shooting levels for concrete slabs
- recording ground levels at respective corners of a set-out
- recording slab or pad levels for placement of steel columns
- recording or checking levels in shallow drainage excavation
- boning for alignment on ground or in drainage excavation

Levelling equipment or devices include but are not limited to:

- dumpy level
- automatic level
- tilting level
- rotating laser level
- boning rods

OH&S requirements to be in accordance with Statutory Legislation and Regulations which may include:

- worksite environment and safety
- use of tools and equipment
- use of laser equipment
- protective clothing and equipment

Heights or levels may be give n by:

- drawing/sketch indicating mark
- verbal or written instruction indicating level or mark
- datum/survey peg fixed into ground
- chalk or nail mark on paved/concrete surface

Personal protective equipment may include:

- overalls
- boots
- jacket
- hard hat
- safety glasses/goggles
- dust masks
- gloves

Associated equipment and tools may include but are not limited to:

- staff
- measuring tape/rule
- string line
- wooden/steel pegs
- laser target and staff
- hammer

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Instructions reporting of faults may be verbal or written.

EVIDENCE GUIDE

Competency is to be demonstrated by carrying out safe and effective nominated levelling and boning exercises using any two of the types of levels listed within the range of variables statement related to the work orientation.

(1) Critical Aspects of Evidence

It is essential that competence be observed in the following aspects:

- demonstrate compliance with Occupational Health and Safety regulations applicable to workplace operations
- show compliance with organisational policies and procedures including Quality Assurance requirements
- adopt and carry out correct procedures prior to and during levelling and boning processes
- demonstrate safe and effective operational use of tools, plant and equipment
- indicate particular attention to accurately read ing and recording staff readings
- show particular care of equipment in handling, setting up and storing on completion
- interactively communicate with others to ensure safe and effective site operations

(2) Pre-requisite Relationship of Units

Competency in this unit may be determined concurrently with other work orientation units based upon integrated project work.

- BCGCOR0001A Carry out interactive workplace communication
- BCGCOR0041A Carry out measurements and calculations
- BCGCOR0081A Use simple levelling devices

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(3) Underpinning Knowledge and Skills

Knowledge
Knowledge of:

- workplace and equipment safety requirements
- hand tools
- levelling equipment
- use of levelling devices
- measurement and calculation
- drawings, sketches and instructions
- workplace communications

Skills
The ability to:

- work safely to instructions
- use levelling equipment
- communicate effectively
- read and record measurements
- measure accurately

(4) Resource Implications

The following resources should be made available:

- levelling equipment appropriate to levelling processes
- appropriate tools and associated equipment to support levelling processes
- suitable work area appropriate to levelling activities
- suitable plans/drawing and specifications/instructions

(5) Method of Assessment

Competency shall be assessed while work is being done under supervision with regular checks, but may include some autonomy when working as part of a team.

Assessment should be by direct observation of tasks and questioning related to underpinning knowledge.

Assessment may be by intermittent checking at the various stages of the job application in accordance with the performance criteria, or may be at the completion of each process.

(6) Context of Assessment

Competency should be assessed in the workplace or simulated workplace environment in accordance with work practices and safety procedures.

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CRITICAL EMPLOYABILITY SKILLS

Three levels of performance denote level of competency required to perform a task. These levels do not relate to the NCTVET Qualifications Framework. They relate to the seven areas of generic competency that underpin effective workplace practices.

Levels of Competency		
Level 1.	Level 2.	Level 3.
• Carries out established processes • Makes judgement of quality using given criteria	• Manages process • Selects the criteria for the evaluation process	• Establishes principles and procedures • Evaluates and reshapes process • Establishes criteria for evaluation

Collect, analyse and organise information	Level 1	
Communicate ideas and information	Level 1	
Plan and organise activities	Level 1	
Work with others and in team	Level 1	
Use mathematical ideas and techniques	Level 1	
Solve problems	Level 1	
Use technology	Level 1	

Please refer to the Assessment Guidelines for advice on how to use the Critical Employability Skills.

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BCGMAS0292A: Carry out concrete work

Competency Descriptor: This unit deals with the skills and knowledge required to effectively handle, place and compact concrete, and applies to individuals working in the construction industry.

Competency Field: General Construction

ELEMENT OF COMPETENCY	PERFORMANCE CRITERIA
1. Plan and prepare work	1.1 Quality Assurance requirements for company's concrete operations recognised and adhered to.
	1.2 OH&S requirements with application tasks and workplace environment recognised and adhered to, including identification of hazardous material.
	1.3 Appropriate personal protective equipment selected, correctly fitted and used.
	1.4 Tools and equipment selected, to carry out processes consistent with job requirements, checked for serviceability and any faults reported to supervisor.
	1.5 Procedures and the individual's role are identified through the supervisor in team operation to place concrete.
2. Carry out concrete placement	2.1 Assistance provided with the undertaking of relevant concrete tests.
	2.2 Concrete transported correctly and safely with wheelbarrow and discharged into formwork using correct manual handling techniques.
	2.3 Concrete placed to instruction, minimising spillage.
	2.4 Concrete compacted to specification and instruction using immersion vibrator or other specified method.
	2.5 Concrete screeded to specified levels/grades as per instructions.
	2.6 Concrete finished to instruction to specified surface finish.
	2.7 Curing process identified and applied to instruction.

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	2.8	Concrete surface adequately covered with appropriate material to support curing process and protect it from damage.
3. Clean up site	3.1	Site cleaned free of debris.
	3.2	Waste and unwanted material disposed of safely.
	3.3	Tools and equipment cleaned, maintained and stored.

RANGE STATEMENT

This unit applies to manual handling and placing of concrete.

Work is undertaken as part of a team under supervision.

Quality Assurance requirements may include:

- workplace operations and work procedures
- quality of material
- control of placement, compaction and finish of concrete
- use and maintenance of tools, plant and equipment
- specifications of work

Tools and equipment may include:

- shovels and rakes
- wooden floats
- steel floats
- bull floats
- immersion vibrator or vibrating table
- tarpaulins/covers
- curing agent applicator
- steam generator
- wheelbarrow
- tamping rods
- screed boards
- edging tool
- brooms

Concrete work includes placement of concrete onto:

- foundation
- slab on
- simple retaining walls

Concrete may be cured by:

- atmospheric conditions
- applied moisture
- applied agents

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Waste material and debris may include:

- concrete spillage
- excess concrete
- pieces of timber
- empty containers
- cardboard and paper

Personal protective equipment may include:

- safety goggles/glasses
- respirators
- ear muffs and safety boots
- boots
- water proof pants and jacket

Concrete may be transported to formwork an d placed by the following methods:

- directly from pre-mix truck
- wheelbarrow
- buckets
- manually

Concrete may be finished by:

- steel float
- bull floats
- wood float
- broom

Instructions would be part of supervisor's directions. Instructions and reporting of f aults may be verbal or written.

EVIDENCE GUIDE

Competency is to be demonstrated by the safe and effective placement and finish of concrete using any of the conditions and types of structures listed within the range of variables statement, relevant to th e work orientation.

(1) Critical Aspects and Evidence

It is essential that competence be observed in the following aspects:

- demonstrate compliance with Occupational Health and Safety regulations applicable to concrete work and workplace operations
- show compliance with organisational policies and procedures including Quality Assurance requirements
- carry out correct procedures prior to and during application of concreting process
- demonstrate safe and effective operational use of tools, plant and equipment
- interactively communicate to support team and ensure safe and effective workplace operations
- give particular attention to placement and compaction processes

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(2) Pre-requisite Relationship of Units

Competency in this unit may be determined concurrently, based upon integrated project work using the following units of competence:

- BCGCAR0252A Erect and strip formwork for concrete work
- BCGSTW0262A Carry out steel-fixing

Pre-requisites for this unit in addition to BCGCAR0252A and BCGSTW0262A are:

- BCGCOR0011A Carry out OH&S requirements
- BCGCOR0051A Use hand and power tools
- BCGCOR0061A Use small plant and equipment
- BCGMAS0101A Carry out concrete work to simple forms

(3) Underpinning Knowledge and Skills

Knowledge
Knowledge of:

- workplace and equipment safety requirements
- concrete construction
- hand tools and equipment
- materials relating to the concreting process
- materials handling
- measurement relevant to concrete work
- drawings/specifications
- transporting, placing concrete
- levelling equipment
- simple formwork and reinforcement component

Skills
The ability to:

- work safely to instructions
- use power tools and hand tools
- handle materials
- select equipment appropriate to concreting process
- measure relative to concreting process
- communicate effectively
- use simple levelling equipment

(4) Resource Implications

The following resources should be made available:

- hand tools and power tools appropriate to concreting process
- plant and equipment appropriate to concreting process
- suitable formwork with placed reinforcement appropriate to concreting process
- concrete testing equipment

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(5) Method of Assessment

Competency shall be assessed while work is being done under direct supervision with regular checks, but may include some autonomy when working as part of a team, i n order to achieve outcomes within time constraints.

Assessment should be by direct observation of tasks and questioning related to underpinning knowledge.

Assessment may be by intermittent checking at the various stages of the job application in accordance with the performance criteria, or may be at the completion of the process.

(6) Context of Assessment

Competency should be assessed in the workplace or simulated workplace environment in accordance with work practices and safety procedures.

CRITICAL EMPLOYABILITY SKILLS

Three levels of performance denote level of competency required to perform a task. These levels do not relate to the NCTVET Qualifications Framework. They relate to the seven areas of generic competency that underpin effective workplace practices.

Levels of Competency		
Level 1.	Level 2.	Level 3.
• Carries out established processes • Makes judgement of quality using given criteria	• Manages process • Selects the criteria for the evaluation process	• Establishes principles and procedures • Evaluates and reshapes process • Establishes criteria for evaluation

Collect, analyse and organise information	Level 1	
Communicate ideas and information	Level 1	
Plan and organise activities	Level 1	
Work with others and in team	Level 1	
Use mathematical ideas and techniques	Level 1	
Solve problems	Level 1	
Use technology	Level 1	

Please refer to the Assessment Guidelines for advice on how to use the Critical Employability Skills.

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BCGMAS0892A: Finish concrete

Competency Descriptor: This unit deals with the skills and knowledge required to prepare and finish concrete surfaces, and applies to individuals working in masonry and other concrete related skills in the construction industry.

Competency Field: General Construction

ELEMENT OF COMPETENCY		PERFORMANCE CRITERIA	
1	Define type of surface finish	1.1	Quality Assurance requirements of company's concreting operations recognised and adhered to.
		1.2	Occupational Health and Safety (OH&S) requirements for placing and finishing concrete and workplace environment recognised and adhered to.
		1.3	Quality/pattern/type of concrete surface finish defined from job plans and specifications.
2	Select tools and equipment	2.1	Concrete finishing tools and equipment selected to carry out processes consistent with job requirements, checked for serviceability and any faults reported to supervisor.
		2.2	Appropriate personal protective equipment selected, correctly fitted and used.
3	Finish concrete	3.1	Concrete place and compacted to required standards.
		3.2	Screeded concrete surface wood floated or given initial trowel application using mechanical trowelling machine.
		3.3	Control/structural joints defined and edges trowelled to specified location according to the appropriate drawings and specifications.
		3.4	Concrete surface given final trowel/finish to architects design engineers specifications.
4	Clean up	4.1	Area cleared and waste material removed.
		4.2	Tools and equipment cleaned, maintained and stored.

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RANGE STATEMENT

This unit applies to the finishing of surfaces of placed concrete.

Finishes to concrete surfaces include:

- steel trowelled
- wood floated
- broomed
- brushed to expose aggregate

Finishing of concrete to be in accordance with specifications and Building Codes.

Quality Assurance requirements may include:

- workplace operations and procedures
- application procedures for finishing concrete
- protection to finished surfaces
- use and maintenance of equipment
- attention to specifications of work

OH&S requirements to be in accordance with Statutory Legislation and Regulations and may include:

- workplace environment and safety
- protective clothing and equipment
- use of tools and equipment
- handling of materials
- working platforms

Personal protective equipment may include:

- boots
- safety glasses/goggles
- ear plugs/muffs
- gloves

Tools, plant and equipment may include but are not limited to:

- power trowel
- wood float
- steel float
- brooms
- hoses
- edging tools

Reporting of faults should be in accordance with company's worksite procedures and may be verbal or written.

EVIDENCE GUIDE

Competency is to be demonstrated by finishing concrete in at least three of the types of finishes listed within the range statement.

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(1) Critical Aspects of Evidence

It is essential that competence be observed in the following aspects:

- demonstrate compliance with occupational health and safety regulations applicable to workplace and concrete placing operations
- indicate compliance with organisational policies and procedures
- select and use appropriate processes, tools and equipment
- apply organisational quality procedures and processes within the context of placing and finishing concrete
- finish concrete surface in accordance with specifications
- take measures to protect concrete surface from either pedestrian, vehicular traffic, and the weather
- identify faults and problems that occur and necessary action taken to rectify
- interactively communicate with others to ensure safe and effective work procedures

(2) Pre-requisite Relationship of Units

- BCGCOR0001A Carry out interactive workplace communication
- BCGCOR0061A Use small plant and equipment
- BCGMAS0101A Carry out concrete work to simple forms
- BCGMAS0292A Carry out concrete work

This competency may be assessed concurrently with:

- BCGMAS0912A Place concrete
- BCGMAS0923A Cure concrete

(3) Underpinning Knowledge and Skills

Knowledge
Knowledge of:

- workplace and equipment safety requirements including relevant statutory regulations, codes and standards
- work organisation factors affecting concrete setting time
- concrete finishing techniques
- specifications
- tools and equipment

Skills
The ability to:

- work safely
- organise work
- use tools and equipment
- communicate effectively

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(4) Resource Implications

The following resources should be provided:

- freshly screeded concrete
- tools, plant and equipment appropriate to the finishing processes
- specifications for concrete finish

(5) Method of Assessment

Competency should be assessed through direct observation and questions related to underpinning knowledge.

Competency should be assessed under general guidance checking at various stages of the process and at completion of the activity against performance criteria and speci fications.

(6) Context of Assessment

Competency may be assessed in the workplace or simulated workplace setting.

Assessment should be while tasks are undertaken either individually or as part of a team under limited supervision.

CRITICAL EMPLOYABILITY SKILLS

Three levels of performance denote level of competency required to perform a task. These levels do not relate to the NCTVET Qualification Framework. They relate to the seven areas of generic competency that underpin effective workplace practices.

Levels of Competency		
Level 1.	Level 2.	Level 3.
• Carries out established processes • Makes judgement of quality using given criteria	• Manages process • Selects the criteria for the evaluation process	• Establishes principles and procedures • Evaluates and reshapes process • Establishes criteria for evaluation

Collect, analyse and organise information	Level 2	
Communicate ideas and information	Level 1	
Plan and organise activities	Level 2	
Work with others and in team	Level 2	
Use mathematical ideas and techniques	Level 2	
Solve problems	Level 1	
Use technology	Level 1	

Please refer to the Assessment Guidelines for advice on how to use the Critical Employability Skills

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BCGMAS0912A: Place concrete

Competency Descriptor: This unit deals with the skills and knowledge required to place and consolidate concrete, and applies to individuals working in concrete work in the construction industry.

Competency Field: General Construction

ELEMENT OF COMPETENCY		PERFORMANCE CRITERIA	
1	Plan and prepare work	1.1	Quality Assurance requirements of company's concreting operations recognised and adhered to.
		1.2	OH&S requirements for workplace environment and preparing for and placing of concrete recognised and adhered to.
		1.3	Method of placement and consolidation identified in accordance with job requirements and engineer's specifications.
		1.4	Appropriate personal protective equipment selected, correctly fitted and used.
		1.5	Plant, tools and equipment selected to carry out processes consistent with job requirements, checked for serviceability and any faults reported to supervisor.
2	Define and prepare work area	2.1	Location of concrete placement defined from drawings and specifications and checked to be free of debris and waste.
		2.2	Safe working area maintained around pour location using barriers and signage consistent with OH&S regulations.
		2.3	Plants, tools and equipment located to designed requirement for planned placement.
3	Place concrete	3.1	Concrete poured in horizontal layers into location to levels as indicated by markers, level pegs or lines.
		3.2	Height of vertical drop minimised to avoid segregation.
		3.3	Poured concrete consolidated during process using approved compaction or vibration method to specifications
		3.4	Finished levels checked against designed levels using appropriate levelling device.

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4	Screed/level concrete	4.1	Concrete screeded to correct levels and/or grades using appropriate straight edged tool/formwork mounted screed.
5	Clean up	5.1	Area cleared of waste and equipment.
		5.2	Waste and unwanted material removed and placed into job waste bins or rubbish stockpiles.
		5.3	Tools and equipment cleaned, maintained and stored.

RANGE STATEMENT

This unit applies to the placing of concrete into forms or foundations

Forms and foundations to include:
- slab on ground
- suspended slab
- columns
- beams
- piers
- strip footings
- pads

Personal protective equipment may include:

- safety goggles/glasses
- boots
- gloves
- respirators/masks

Tools and equipment may include but are not limited to:

- shovels
- rakes
- screed boards
- levels
- measuring tape/rule
- compressor
- vibrator
- wheelbarrows
- kibble
- dumper
- chute
- concrete placing boom

Quality Assurance requirements may include:

- method of transporting
- control of handling and spillage
- placement control
- cleaning of equipment

OH&S requirements to be in accordance with Statutory Legislation and Regulations and may include:

- protective clothing and equipment
- working platforms
- working from scaffolding
- safety hazards
- use of plant and equipment

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Debris and waste may include:

- off-cut material
- loose soil
- empty containers
- paper and cardboard

Reporting of faults should be in accordance with organisations workplace procedures and may be verbal or written.

EVIDENCE GUIDE

Competency is to be demonstrated by placing concrete into prepared formwork or foundation.

(1) Critical Aspects of Evidence

It is essential that competence is demonstrated in the critical aspects of:

- demonstrate compliance with Occupational Health and Safety regulations applicable to workplace and concrete placing operations
- indicate compliance with organisational pol icies and procedures
- select and use appropriate processes, tools and equipment
- apply organisational quality procedures and processes within the context of concrete placement
- select and use appropriate concrete handling/transportation method
- place concrete ensuring no segregation and adequate compaction
- check formwork and support system periodically during the pour
- identify faults and problems that occur and necessary action taken to rectify
- interactively communicate with others to ensure safe and effective placement of concrete

(2) Pre-requisite Relationship of Units

- BCGCOR0061A Use plant and equipment
- BCGMAS0101A Carry out concrete work to simple forms
- BCGMAS0292A Carry out concrete work

This competency may be assessed concurrently with:

- BCGMAS0903A Transport concrete

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(3) Underpinning Knowledge and Skills

Knowledge
Knowledge of:

- workplace and equipment safety requirements including relevant statutory regulations, codes and standards
- concrete mix specifications
- cause and effect of segregation
- effect of over or under compaction of concrete
- plant and equipment
- reinforcement of concrete

Skills
The ability to:

- work safely
- organise work
- use tools and equipment
- communicate effectively

(4) Resource Implications

The following resources should be provided:

- pour location for concrete placement
- tools, plant and equipment appropriate to placement processes
- concrete relevant to proposed pour

(5) Method of Assessment

Competency should be assessed through direct observation of application to tasks and q uestions related to underpinning knowledge.

Competency should be assessed under general guidance checking at various stages of the process and at completion of the activity against performance criteria and specifications.

(6) Context of Assessment

Competency may be assessed in the workplace or simulated workplace setting.

Assessment shall be while tasks are undertaken either individually or as part of a team under limited supervision.

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CRITICAL EMPLOYABILITY SKILLS

Three levels of performance denote l evel of competency required to perform a task. These levels do not relate to the NCTVET Qualifications Framework. They relate to the seven areas of generic competency that underpin effective workplace practices.

Levels of Competency		
Level 1.	Level 2.	Level 3.
• Carries out established processes • Makes judgement of quality using given criteria	• Manages process • Selects the criteria for the evaluation process	• Establishes principles and procedures • Evaluates and reshapes process • Establishes criteria for evaluation

Collect, analyse and organise information	Level 2	To measure self-performance
Communicate ideas and information	Level 1	With members of the work team
Plan and organise activities	Level 3	For self
Work with others and in team	Level 2	In completing scheduled tasks
Use mathematical ideas and techniques	Level 1	As an aid to measure and schedule tasks
Solve problems	Level -	As an aid to self-development
Use technology	Level 2	To manage scheduling and completion of tasks

Please refer to the Ass essment Guidelines for advice on how to use the Critical Employability Skills.

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BCGTIL0121A: Prepare for wall and floor tiling

Competency Descriptor: This unit deals with the skills and knowledge required to effectively carry out work in preparing the process for laying wall and floor tiles, and applies to all individuals involve in tiling.

Competency Field: General Construction

ELEMENT OF COMPETENCY		PERFORMANCE CRITERIA	
1	Plan for the construction process	1.1	Quality Assurance requirements of company's construction operations recognised and adhered to.
		1.2	Preparation and planning requirements identified from drawings/work location and/or supervisor's instructions.
		1.3	OH&S requirements identified and adhered to in accordance with application tasks and workplace environment.
		1.4	Safety hazards identified and correct procedures adopted to minimise risk to self and others.
		1.5	Materials selected to supervisor's instructions and safely handled and stored/located ready for application.
		1.6	Appropriate personal protective equipment selected, correctly fitted and used.
		1.7	Tools and equipment selected consistent with the job requirements, checked for serviceability and any faults reported to supervisor.
		1.8	Fixing/fasteners selected consistent with job requirements, where applicable, and checked for serviceability.
2	Prepare materials selected for construction process	2.1	Activities for material preparation identified from specifications or supervisor's instructions.
		2.2	Material preparation carried out to satisfy requirements of application process.
3	Prepare work area suitable for construction process	3.1	Activities to be carried out in work area identified from type of tile, surface to be covered, method of application and access to surface.

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		3.2	Work area prepared for the application process to specifications or supervisor's instructions.
4	Use tools, plant and equipment appropriate for construction process	4.1	Regular hand and power tools suitable for application process identified to job requirements.
		4.2	Hand and power tools used safely and effectively to carry out processes.
5	Prepare underlay/sheeting for floor and walls	5.1	Assistance with underlay preparation provided under instructions and supervision.
		5.2	Surface finished flat/level with joints flush and sealed.
6	Prepare background of brick, concrete or blockwork for solid plastering	6.1	Structure identified and surface wire and brushed to remove loose material and holes. Depressions and gaps filled with suitable patching material to supervisor's instructions.
		6.2	Materials for splash coat proportioned and mixed to instructions ready for application to wet surface.
7	Prepare for render surface for tiling	7.1	Horizontal/vertical surrounds prepared for tiling process in accordance with type of tile and specified finish, where applicable.
		7.2	Materials for render coat proportioned and mixed to instructions ready for application.
		7.3	Rendered surface scratched and dried to instructions in accordance with specifications.
8	Clean up	8.1	Materials stacked/stored for re-use or disposal.
		8.2	Work area cleared.
		8.3	Tools and equipment cleaned, maintained and stored.
		8.4	Waste disposed of using appropriate method to NEPA requirements.

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RANGE STATEMENT

This unit applies to the preparation and construction processes carried out in preparing for the tiling of wall and floor surfaces.

Types of tiles include:

- ceramic
- marble
- stone
- granite
- terra cotta

Construction processes include:

- use of underlay material
- rendering to provide flat surface
- preparing of surfaces
- workplace preparation

Tools and equipment include but are not limited to:

- hammers
- saws
- measuring ruler/tape
- power saw
- power drills and screwdriver
- cement sheet cutters
- spirit levels
- concrete mixers
- shovels
- wheelbarrows
- wire brushes
- brooms
- power sander

Underlay materials include:

- plasterboard
- fibro cement

Fixing and fasteners include but are not limited to:

- plasterboard nails
- clouts
- soft sheet nails
- self tapping screws
- wall board adhesive

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Surrounds for tiling include:

- extruded metal sections
- timber moulding

Patching materials include but are not limited to:

- plaster
- sand and cement
- cornice adhesive
- fillers (pre-mixed and mix)
- caulking compounds

Work is to be done under supervision with instructi ons being as part of supervisor's directions, consistent with job specifications.

Reporting of faults may be verbal or written.

OH&S requirements to be in accordance with Statutory Legislative regulations.

EVIDENCE GUIDE

Competency is to be demonstrat ed by carrying out the safe and effective preparation for tiling applications in accordance with the performance criteria using any of the processes and range of materials listed within the range of variables statement.

(1) Critical Aspects of Evidence

It is essential that competence is observed in the following aspects:

- demonstrate compliance with Occupational Health and Safety regulations applicable to workplace operations
- indicate compliance with organisational policies and procedures including Quali ty Assurance requirements
- carry out correct procedures prior to and during application of construction processes
- demonstrate safe and effective operational use of tools and equipment
- give particular attention to specified finish of surfaces ready for tili ng
- interactively communicate with others to ensure safe and effective workplace operations

(2) Pre-requisite Relationship of Units

- BCGCOR0011A Carry out OH&S requirements
- BCGCOR0051A Use hand and power tools
- BCGCOR0061A Use small plant and equipment

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(3) Underpinning Knowledge and Skills

Knowledge
Knowledge of:

- workplace and equipment safety requirements
- drawings and specifications
- portable power tools
- hand tools and equipment
- materials relative to wall and floor tiling
- fixing and fasteners consistent with wall and floor tiling requirements
- workplace communications
- materials handling
- measurement relative to wall and floor tiling

Skills
The ability to:

- work safely to instructions
- use power tools and hand tools
- handle material
- select material
- measure relative to the process
- communicate effectively

(4) Resource Implications

The following resources should be made available:

- general construction materials relevant to wall and floor tiling preparation activities
- hand and power tools appropriate to wal l and floor tiling processes
- plant and equipment appropriate to wall and floor tiling processes
- suitable work area appropriate to wall and floor tiling activities

(5) Method of Assessment

Competency shall be assessed while work is undertaken under direc t supervision with regular checks, but may include some autonomy when working as part of a team.

Competency in this unit may be determined concurrently, based on integrated project work.

Assessment may be by intermittent checking at the various stages of the job application in accordance with the performance criteria, or may be at the completion of each process.

(6) Context of Assessment

Competency should be assessed in the workplace or simulated workplace environment in accordance with work practices and safety procedures.

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CRITICAL EMPLOYABILITY SKILLS

Three levels of performance denote level of competency required to perform a task. These levels do not relate to the NCTVET Qualification Framework. They relate to the seven areas of generic compete ncy that underpin effective workplace practices.

Levels of Competency		
Level 1.	Level 2.	Level 3.
• Carries out established processes • Makes judgement of quality using given criteria	• Manages process • Selects the criteria for the evaluation process	• Establishes principles and procedures • Evaluates and reshapes process • Establishes criteria for evaluation

Collect, analyse and organise information	Level 1	
Communicate ideas and information	Level 1	
Plan and organise activities	Level 1	
Work with others and in team	Level 1	
Use mathematical ideas and techniques	Level 1	
Solve problems	Level 1	
Use technology	Level 1	

Please refer to the Assessment Guidelines for advice on how to use the Critical Employability Skills.

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BCGMAS0091A: Carry out excavation and install support

Competency Descriptor: This unit deals with the skills and knowledge required to effectively carry out excavation work and to install support for excavation, and applies to individuals working in trenching and foundation work in the construction industry.

Competency Field: General Construction

ELEMENT OF COMPETENCY		PERFORMANCE CRITERIA	
1.	Plan and prepare work	1.1	Quality Assurance requirements of company's construction operations recognised and adhered to.
		1.2	Occupational Health and Safety (OH&S) requirements recognised and adhered to in accordance with application tasks and workplace environment.
		1.3	Appropriate personal protective equipment selected, correctly fitted and used.
		1.4	Tools and equipment requirements identified to supervisor's instructions, consistent with the needs of the job.
2.	Locate excavation and erect safety equipment	2.1	Excavation located from instruction.
		2.2	Site pegs installed, service markers identified and excavation limits marked.
		2.3	Safety barricades, signs and lights erected in positions as required by OH&S requirements.
3.	Select tools and equipment	3.1	OH&S requirements associated with use of tools and equipment recognised and adhered to.
		3.2	Personal protective equipment items selected in accordance with excavation method and conditions correctly fitted and used.
		3.3	Hand tools and equipment selected consistent with the needs of the job, checked for serviceability and any faults reported to supervisor.

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4.	Dig excavations by hand	4.1 Where appropriate temporary drainage system established to divert surface and subsurface water to storm water drainage system.
		4.2 Excavations safely dug with hand tools under dir ection.
		4.3 Service markers or taped areas identified.
		4.4 Damage or interference with underground services (power, water, gas, telephone) avoided during excavation process.
		4.5 Excavations cleaned out with hand tools, free from loose material.
5.	Assist machine excavation operations	5.1 Machine operator assisted with excavation by verbal and trimming support, ensuring it is to line and depth.
		5.2 Excavation cleaned out by hand according to job requirements and instructions.
6.	Install excavat ion support	6.1 Excavation works carried out in accordance with regulatory authority's requirements.
		6.2 Trench/excavation support installed to instruction according to OH&S regulations.
7.	Clean up	7.1 Site cleaned and cleared of unwanted excavated ma terial.
		7.2 Tools cleaned, maintained and stored.

RANGE STATEMENT

This unit applies to excavations carried out by hand and assisting excavator operators with their operation.

This unit applies to trench/excavation depth not exceeding 1.5m excavation and includes but is not limited to:

- post holes
- pits
- pad excavations
- trenches
- levelling of work area

Regulatory authorities are those under the Statutory Legislation governing:

- water
- sewerage
- gas
- electricity
- telephone

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OH&S requirements are to be in accordance with the Statutory Legislation and regulations.

Work is to be undertaken in a team situation or individually under supervision.

Reporting of faults may be written or verbal.

EVIDENCE GUIDE

Competency is to be demonstrated by carrying out t he safe and effective excavation and/or support of at least two different types of excavations from those listed within the range of variables statement, relevant to the work orientation.

(1) Critical Aspects and Evidence

It is essential that competence is observed in the following aspects:

- demonstrate compliance with Occupational Health and Safety regulations applicable to workplace operations
- indicate compliance with organisational policies and procedures including Quality Assurance requirements
- carry out correct procedures prior to and during excavation processes
- identify and understand instruction relevant to the location of excavation
- demonstrate safe and effective operational use of tools and equipment
- interactively communicate with others to ensur e safe and effective operations.

(2) Pre-requisite Relationship of Units

- BCGCOR0001A Carry out interactive workplace communication
- BCGCOR0011A Carry out OH&S requirements
- BCGCOR0051A Use hand and power tools

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(3) Underpinning Knowledge and Skills

Knowledge
Knowledge of:

- workplace and equipment safety requirements
- hand tools and equipment
- materials handling
- measurement and calculations
- workplace communications
- regulatory authority's requirement for excavation/support
- range of “in ground” services an d relevant markers/identifiers
- types pf soil

Skills
The ability to:

- work safely to instructions
- use hand tools and equipment
- handle material
- measure relevant to excavation process
- communicate effectively

(4) Resource Implications

The following resources should be made available:

- general construction materials for excavation support
- hand tools appropriate to excavation processes
- work area appropriate for the excavation activities
- appropriate OH&S safety resources to suit excavation location

(5) Method of Assessment

Competency shall be assessed while work is being done, under direct supervision with regular checks, but may include some autonomy when working as part of a team.

Competency in this unit may be determined concurrently, based on integrate d project work. Assessment may be by intermittent checking at the various stages of the job application in accordance with the performance criteria, or may be at the completion of the process.

(6) Context of Assessment

Competency should be assessed in t he workplace or simulated workplace environment in accordance with work practices and safety procedures.

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CRITICAL EMPLOYABILITY SKILLS

Three levels of performance denote level of competency required to perform a task. These levels do not relate to the NCTVET Qualifications Framework. They relate to the seven areas of generic competency that underpin effective workplace practices.

Levels of Competency		
Level 1.	Level 2.	Level 3.
• Carries out established processes • Makes judgement of quality using given criteria	• Manages process • Selects the criteria for the evaluation process	• Establishes principles and procedures • Evaluates and reshapes process • Establishes criteria for evaluation

Collect, analyse and organise information	Level 1	
Communicate ideas and information	Level 1	
Plan and organise activities	Level 1	
Work with others and in team	Level 1	
Use mathematical ideas and techniques	Level 1	
Solve problems	Level 1	
Use technology	Level 1	

Please refer to the Assessment Guidelines for advice o n how to use the Critical Employability Skills.

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BCGMAS0131A: Prepare for solid plastering

Competency Descriptor: This unit deals with the skills and knowledge required to effectively prepare the process for carrying out solid plastering work, and applies to individuals working in masonry in the construction industry.

Competency Field: General Construction

ELEMENT OF COMPETENCY		PERFORMANCE CRITERIA	
1.	Plan for construction process	1.1	Quality Assurance requirements of company's construction operations recognised and adhered to.
		1.2	Preparation and planning requirements identified from drawings/work location and/or supervisor's instructions.
		1.3	OH&S requirements identified and adhered to in accordance with application tasks and workplace environment.
		1.4	Safety hazards identified and correct procedures adopted to minimise risk to self and others.
		1.5	Materials selected according to supervisor's instructions safely handled and stored/located ready for application.
		1.6	Appropriate personal protective equipment selected, correctly fitted and used.
		1.7	Tools and equipment selected consistent with the job requirements, checked for serviceability and any faults reported to supervisor.
		1.8	Fixing/fasteners selected consistent with the job requirements where applicable and checked for serviceability.
2.	Prepare materials selected for construction process	2.1	Activities for material preparation identified from specifications or supervisor's instructions.
		2.2	Material preparation carried out to satisfy requirements of application process.
3.	Prepare work area suitable for construction process	3.1	Activities to be carried out in work area identified from surface to be covered, method of application and access to surface.

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		3.2 Work area prepared for construction process according to supervisor's instructions.
4.	Use tools, plant and equipment appropriate for construction process	4.1 Regular hand and power tools suitable for application process identified to job requirements.
		4.2 Hand and power tools used safely and effectively to carry out processes where applicable.
5.	Prepare background of brick, concrete or blockwork for solid plastering	5.1 Structure identified and surface prepared. Depressions patched with suitable material to supervisor's instructions.
		5.2 Concrete surface where appropriate is roughened or adhesive applied.
		5.3 Materials for scratch coat proportioned and mixed to instructions ready for application to wet surface.
6.	Clean up	6.1 Materials stacked/stored for re-use or disposed of.
		6.2 Work area cleared.
		6.3 Tools and equipment cleaned, maintained and stored.

RANGE OF VARIABLES

This unit applies to the preparation and construction processes carried out in preparing for the application of solid plastering to surfaces.

Background surfaces for application of solid plastering include but not limited to:

- concrete
- concrete block work
- brickwork
- stonework
- polystyrene
- expanded metal or bird wire

Construction process includes:

- application of solid plaster
- preparation of surfaces
- finish of surfaces
- workplace preparation

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Material preparation may include:

- locating loose materials for mixing
- preparing brackets for fixing to steelwork
- cutting expanded metal or bird-wire for placement

Tools and equipment may include but are not limited to:

- measuring tape/rule
- brushes
- broom
- screed boards
- scaffolding
- spirit level
- straight edges
- concrete mixer
- shovels
- wheelbarrows
- power leads
- hoses
- masonry hammer

Patching materials include but are not limited to:

- sand and cement
- plaster
- cornice adhesive
- caulking compounds

Work area preparation may include:

- cleaning of area
- erecting restricted height scaffolding
- setting up concrete mixer
- establishing temporary water and power supply

Personal protective equipment may include:

- overalls
- waterproof pants and jacket
- boots
- water (rubber) boots
- gloves
- dust masks/respirators
- hard hat/cap
- safety goggles

Work is to be undertaken either as part of a team or individually, under supervision with instruction being as part of the supervisor's directions either verbal or written.

Reporting of faults may be verbal or written.

OH&S requirements to be in accordance with the Statutory regulations.

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EVIDENCE GUIDE

Competency is to be demonstrated by carrying out the safe and effec tive preparation for solid plastering applications in accordance with performance criteria using any of the range of materials and processes listed within the range of variables statement.

(1) Critical Aspects of Evidence

It is essential that competence be observed in the following aspects:

- demonstrate compliance with Occupational Health and Safety regulations applicable to workplace operations
- indicate compliance with organisational policies and procedures including Quality Assurance requirements
- carry out correct procedures prior to and during application of construction processes
- demonstrate safe and effective operational use of tools, plant and equipment
- interactively communicate with others to ensure safe and effective workplace operations

(2) Pre-requisite Relationship of Units

- BCGCOR0011A Carry out OH&S requirements
- BCGCOR0051A Use hand and power tools
- BCGCOR0061A Use small plant and equipment
- BCGCOR0071A Erect and dismantle restricted height scaffolding

(3) Underpinning Knowledge and Skills

Knowledge
Knowledge of:

- workplace and equipment safety requirements
- drawings and specifications
- portable power tools
- hand tools and equipment
- materials relative to solid plastering
- materials handling
- measurement relative to solid plastering
- fixing and fas teners consistent with solid plastering requirements
- workplace communications

Skills
The ability to:

- work safely to instructions
- use power and hand tools
- handle material
- select material
- communicate effectively
- measure relative to process

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(4) Resource Implications

The following resources should be made available:

- general construction materials relevant to solid plastering
- hand and power tools appropriate to solid plastering process
- plant and equipment appropriate to solid plastering process
- suitable work area appropriate to solid plastering activities

(5) Method of Assessment

Competency should be assessed while work is being done under direct supervision with regular checks, but may include some autonomy when working as part of a team.

Competency in this unit may be determined concurrently, based on integrated project work.

Assessment may be by intermittent checking at the various stages of the job application in accordance with the performance criteria, or may be at the completion of each proces s.

(6) Context of Assessment

Competency should be assessed in the workplace or simulated workplace environment in accordance with work practices and safety procedures.

CRITICAL EMPLOYABILITY SKILLS

Three levels of performance denote level of compete ncy required to perform a task. These levels do not relate to the NCTVET Qualifications Framework. They relate to the seven areas of generic competency that underpin effective workplace practices.

Levels of Competency		
Level 1.	Level 2.	Level 3.
• Carries out established processes • Makes judgement of quality using given criteria	• Manages process • Selects the criteria for the evaluation process	• Establishes principles and procedures • Evaluates and reshapes process • Establishes criteria for evaluation

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Collect, analyse and organise information	Level 1	
Communicate ideas and information	Level 1	
Plan and organise activities	Level 1	
Work with others and in team	Level 1	
Use mathematical ideas and techniques	Level 1	
Solve problems	Level 1	
Use technology	Level 1	

Please refer to the Assessment Guidelines for advice on how to use the Critical Employability Skills.

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BCGMAS0151A: Prepare for construction process (Brick/Block laying)

Competency Descriptor: This unit deals with the skills and knowledge required to effectively prepare the construction process for laying concrete blocks/bricks, and applies to individuals working in masonry/concrete trades in the construction industry.

Competency Field: General Construction

ELEMENT OF COMPETENCY	PERFORMANCE CRITERIA
1. Plan for construction process	1.1 Quality Assurance requirements of company's construction operations recognised and adhered to.
	1.2 Job requirements identified from drawings and supervisor's instructions.
	1.3 Occupational Health and Safety (OH&S) requirements identified and adhered to according to application tasks and workplace environment.
	1.4 Safety hazards identified and correct procedures adopted to minimise risk to self and others.
	1.5 Materials selected to supervisor's instructions, safely handled and stored/located and ready for application.
	1.6 Appropriate personal protective equipment selected, correctly fitted and used.
	1.7 Tools and equipment selected are consistent with job requirements, checked for serviceability and any faults reported to supervisor.
2. Prepare materials selected for construction process	2.1 Activities for material preparation identified from specifications or supervisor's instructions.
	2.2 Material preparation carried out to satisfy requirements of construction process.
	2.3 Correct manual handling techniques used to remove materials to location of placement.
	2.4 Components distributed and stacked to suit job location and construction sequence.

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3.	Prepare work area suitable for construction process	3.1	Activities to be carried out in work area identified from typ e of brick/block, planned layout of construction and access location.
		3.2	Work area prepared for construction process according to supervisor's instructions.
4.	Use tools, plant and equipment appropriate for construction process	4.1	Regular hand and po wer tools suitable for application process identified to job requirements.
		4.2	Hand and power tools used safely and effectively to carry out processes.
5.	Mix mortar/concrete by hand	5.1	Materials for mortar/concrete selected to instruction.
		5.2	Additives for mortar/concrete selected to mix requirements.
		5.3	Specified proportions of materials for mortar/concrete mixture prepared accurately in accordance with instruction.
		5.4	Mortar/concrete materials mixed to a workable consistency.
6.	Assist with brick/block works	6.1	Bricks/blocks selected, visually checked to ensure that specifications are met including colour matching surrounding area and distributed to location.
		6.2	Surface brushed/scraped/washed and clean.
7.	Clean-up	7.1	Materials stacked/stored for re-use or removal.
		7.2	Work area cleared.
		7.3	Tools and equipment cleaned, maintained and stored.
		7.4	Waste disposed of using appropriate method according to EPA requirements.

RANGE STATEMENT

This unit applies to the preparation processes carried out to support the laying of brickwork or block work.

Construction processes includes:

- worksite preparation
- preparation for brick/block laying
- finish brickwork/block work face

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Tools and equipment include but are not limited to:

- hammer
- bolster
- shovel
- measuring tape/rule
- concrete mixer
- angle grinder
- masonry saw
- power leads
- hoses
- brushes and brooms
- wheelbarrows
- mortar boards
- bucket

Materials in addition to bricks/blocks include:

- cement and sand
- gravel
- adhesive
- brick/block reinforcement
- steel lintels
- mortar additives (workability and damp proofing)

Specifications for bricks/blocks should be part of Quality Assurance requirements and include:

- size
- shape
- sharp arises (where applicable)
- colour
- strength

Masonry units may include:

- wire cut bricks
- pressed bricks
- solid concrete blocks
- hollow concrete blocks

Materials preparation may include:

- cutting concrete blocks
- locating lintels ready for placement
- distributing vents
- cutting and distributing reinforcement
- preparing materials for batching for mortar and concrete

Work area preparation may include:

- cleaning strip footings or slab
- setting up concrete mixer
- locating mortar boards
- establishing temporary water and power supply
- preparing access for supply of mortar/concrete

Work is to be undertaken as part of a team under supervision with instructions being part of supervisor's directions, either verbal or written.

OH&S requirements to be in accordance with Statutory Legislation and regulations.

Reporting of faults may be verbal or writ ten.

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EVIDENCE GUIDE

Competency is to be demonstrated by carrying out the safe and effective preparation for the laying of bricks/blocks in accordance with the performance criteria using any of the listed range of variables with either brickwork or block work.

(1) Critical Aspects of Evidence

It is essential that competence is observed in the following aspects:

- demonstrate compliance with Occupational Health and Safety regulations applicable to workplace operations
- indicate compliance with organisational policies and procedures including Quality Assurance requirements
- carry out correct procedures prior to and during application of construction processes
- demonstrate safe and effective operational use of tools, plant and equipment
- adopt and use correct procedures to handle and place materials
- interactively communicate with others to ensure safe and effective worksite operations

(2) Pre-requisite Relationship of Units

- BCGCOR0011A Carry out OH&S requirements
- BCGCOR0051A Use hand and power tools
- BCGCOR0061A Use small plant and equipment
- BCGCOR0111A Handle construction material

(3) Underpinning Knowledge and Skills

Knowledge
Knowledge of:

- workplace and equipment safety requirements
- drawings and specifications
- portable power tools
- hand tools and equipment
- materials handling
- mortar and concrete constituents and ratio of mix
- measurement relative to brick/block work
- accessories associated with brickwork/block work construction
- workplace communications

Skills
The ability to:

- work safely to instructions
- read drawings
- use power tools and hand tools
- handle material
- select material
- measure relative to the construction process
- mix mortar and concrete manually and with mixer
- communicate effectively

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(4) Resource Implications

The following resources should be made available:

- construction materials relevant to brick/block work
- hand and power tools appropriate to brick/block work processes
- plant and equipment appropriate to brick/block work processes
- suitable work area appropriate to construction process

(5) Method of Assessment

Competency shall be assessed while work is being done under direct supervision with regular checks, but may include some autonomy when working as part of a team.

Competency in this unit may be determined concurrently, based on integ rated project work.

Assessment may be by intermittent checking at the various stages of the job application in accordance with the performance criteria, or may be at the completion of each process.

(6) Context of Assessment

Competency should be assessed in the workplace or simulated workplace environment in accordance with work practices and safety procedures.

CRITICAL EMPLOYABILITY SKILLS

Three levels of performance denote level of competency required to perform a task. These levels do not relate to the NCTVET Qualifications Framework. They relate to the seven areas of generic competency that underpin effective workplace practices.

Levels of Competency		
Level 1.	Level 2	Level 3.
• Carries out established processes • Makes judgement of quality using given criteria	• Manages process • Selects the criteria for the evaluation process	• Establishes principles and procedures • Evaluates and reshapes process • Establishes criteria for evaluation

Collect, analyse and organise information	Level 1	
Communicate ideas and information	Level 1	
Plan and organise activities	Level 1	
Work with others and in team	Level 1	
Use mathematical ideas and techniques	Level 1	
Solve problems	Level 1	
Use technology	Level 1	

Please refer to the Assessment Guidelines for advice on how to use the Critical Employability Skills.

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BCGCAR0161A: Prepare for carpentry construction

Competency Descriptor: This unit deals with the skills and knowledge required to effectively prepare the process for carrying out construction work in carpentry, and applies to individuals working in the occupation.

Competency Field: General Construction

ELEMENT OF COMPETENCY		PERFORMANCE CRITERIA	
1.	Plan for construction process	1.1	Quality Assurance requirements of company's construction operations recognised and adhered to.
		1.2	Preparation and planning requirements identified from drawings and/or supervisor's instructions.
		1.3	Occupational Health and Safety (OH&S) requirements identified and adhered to in accordance with application tasks and workplace environment.
		1.4	Safety hazards identified and correct procedures adopted to minimise risk to self and others.
		1.5	Materials selected to supervisor's instructions, safely handled, stored/located and ready for application.
		1.6	Appropriate personal protective equipment selected, correctly fitted and used.
		1.7	Tools and equipment selected consistent with job requirements, checked for serviceability and any faults reported to supervisor.
		1.8	Fixing/fastenings selected to instructions consistent with job requirements.
2.	Prepare materials selected for construction process	2.1	Activities for material preparation identified from specifications or supervisor's instructions.
		2.2	Material preparation carried out to satisfy requirements of construction process.

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3.	Prepare work area suitable for construction process	3.1	Activities to be carried out in work area identified from drawing details of proposed construction and supervisor's instructions.
		3.2	Work area prepared for construction of temporary security fence and site structures, building layout and workstation according to supervisor's instruction.
4.	Use tools and equipment appropriate for construction process	4.1	Regular hand and power tools suitable for appl ication process identified to job requirements.
		4.2	Hand and power tools used safely and effectively according to instruction to carry out construction processes.
5.	Select materials and cut components	5.1	Material obtained from stack to instruction.
		5.2	Correct manual handling techniques used to move and place materials.
		5.3	Materials safely moved to work area.
		5.4	Docking/drop saw used to accurately cut one or multiple components to same length according to given instruction.
6.	Distribute components	6.1	Cut components distributed and stacked to suit job location and sequence.
7.	Erect temporary fencing	7.1	Posts are appropriately placed, aligned and firmly fixed.
		7.2	Stiles and cladding materials (metal/board) are firmly fixed.
		7.3	Entrance is of specified size and gate opens, swings and shuts without difficulty.
8.	Clean-up	8.1	Unused material stacked/stored for re-use.
		8.2	Work area cleared.
		8.3	Tools and equipment cleaned, maintained and stored.
		8.4	Waste disposed of using appropriate method according to the Environmental Protection Agency (NEPA) requirements.

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RANGE STATEMENT

This unit applies to the preparation processes associated with carpentry construction work based on the construction of timber partition framing.

Tools and equipment may include but are not limited to:

- measuring tape/rule
- hammer
- docking saw
- jigs/stops
- saw stools
- work bench
- clamps
- squares

Personal protective equipment may include but not limited to:

- overalls
- jacket
- boots
- gloves
- safety goggles/glasses
- ear plugs/muffs
- dust masks/respirators
- hard hat/cap

Safety hazards may include but are not limited to:

- restricted access
- location of power leads
- dust
- off cut material
- lighting
- limited storage space

Construction processes includes:

- workplace preparation
- materials preparation
- assembling of partitions
- erecting and fixing of partitions

Material preparation may include:

- stacking of material
- measuring and marking
- cutting and distributing

Work area preparation may include:

- cleaning of area
- setting up for docking saw
- material storage

Fixing/fasteners may include:

- nails
- screws
- bolts
- masonry anchors
- drive/masonry nails

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Work is to be undertaken as part of a team under supervision with instruction being part of a supervisor's directions, either verbal or written.

OH&S requirements are to be in accordance with Statutory Legislation and Regulations.

Reporting of faults may be verbal or written.

EVIDENCE GUIDE

Competency is to be demonstrated by carrying out the safe and effective preparation of m aterials and work area for the installation of partition framing in accordance with the listed range of variables.

(1) Critical Aspects of Evidence

It is essential that competence be observed in the following aspects:

- demonstrate compliance with Occupational Health and Safety regulations applicable to workplace operations
- indicate compliance with organisational policies and procedures including Quality Assurance requirements
- correct procedures carried out prior to and during application of construction process
- demonstrate safe and effective operational use of tools, plant and equipment
- interactively communicate with others to ensure safe and effective workplace operations

(2) Pre-requisite Relationship of Units

- BCGCOR0011A Carry out OH&S requirements
- BCGCOR0051A Use hand and power tools
- BCGCOR0061A Use small plant and equipment

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(3) Underpinning Knowledge and Skills

Knowledge
Knowledge of:

- workplace and equipment safety requirements
- portable power tools
- hand tools and equipment
- materials relevant to construction process
- materials handling
- measurement relative to construction process
- drawings and specifications
- fixing and fasteners consistent with construction requirements
- workplace communication
- Quality Assurance

Skills
The ability to:

- work safely to instructions
- interpret drawings
- use power tools and hand tools
- handle material
- select material
- measure relative to processes
- communicate effectively

(4) Resource Implications

The following resources should be made available:

- construction materials relevant to proposed construction
- hand and power tools appropriate to construction processes
- plant and equipment appropriate to construction processes
- suitable work area appropriate to proposed activity

(5) Method of Assessment

Competency should be assessed while work is being done under direct supervision with regular checks, but may include some autonomy when working as part of a team.

Competency in this unit should be determined concurrently, based on integrated project work.

Assessment may be by intermittent checking at the various stages of the job application in accordance with the performance criteria, or may be at the completion of each process.

(6) Context of Assessment

Competency should be assessed in the workplace or simulated workpla ce environment in accordance with work practices and safety procedures.

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CRITICAL EMPLOYABILITY SKILLS

Three levels of performance denote level of competency required to perform a task. These levels do not relate to the NCTVET Qualifications Framework. They relate to the seven areas of generic competency that underpin effective workplace practices.

Levels of Competency		
Level 1.	Level 2.	Level 3.
• Carries out established processes • Makes judgement of quality using given criteria	• Manages process • Selects the criteria for the evaluation process	• Establishes principles and procedures • Evaluates and reshapes process • Establishes criteria for evaluation

Collect, analyse and organise information	Level 1	
Communicate ideas and information	Level 1	
Plan and organise activities	Level 1	
Work with others and in team	Level 1	
Use mathematical ideas and techniques	Level 1	
Solve problems	Level 1	
Use technology	Level 1	

Please refer to the Assessment Guidelines for advice on how to use the Critical Employab ility Skills.

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BCGCOR0171A: Prepare for demolition process

Competency Descriptor: This unit deals with the skills and knowledge required to effectively prepare construction process for demolition, and applies to all individuals carrying out initial demolition work in the construction industry.

Competency Field: General and Construction

ELEMENT OF COMPETENCY		PERFORMANCE CRITERIA	
1.	Plan for demolition process	1.1	Quality Assurance requirements of company's construction operations recognised and adhered to.
		1.2	Job requirements identified from drawings/supervisor's instructions.
		1.3	OH&S requirements for demolition tasks and workplace environment recognised and adhered to.
		1.4	Safety hazards identified and correct procedures adopted to minimise risk to self and others.
		1.5	Protection of public and environment identified from demolition plan/instructions.
		1.6	Appropriate personal protective equipment selected according to job requirements, and correctly fitted and used.
		1.7	Tools and equipment selected to instructions consistent with the job requirements, checked for serviceability and any faults reported to supervisor.
		1.8	Protective equipment and materials selected to instructions, consistent with job requirements.
2.	Prepare materials for demolition process	2.1	Materials for protection of others, public and environment selected to instructions.
		2.2	Material preparation carried out to satisfy requirements of protective barriers and construction.
3.	Prepare work area for demolition process	3.1	Activities to be carried out in work area identified from supervisor's instructions.
		3.2	Protective barriers to be erected/constructed identified from drawing details and/or instructions.

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		3.3	Barriers, dust blankets and/or safety fencing erected/installed to instructions.
4.	Use tools and equipment for construction processes	4.1	Regular hand and power tools suitable for application processes identified from demolition plan/supervisor's instructions.
		4.2	Hand and power tools used safely and effectively in construction processes.
5.	Set up plant and equipment for demolition processes	5.1	Position for locating plant and equipment identified in accordance with job instructions.
		5.2	Plant and equipment located and established in position ready for operation.
6.	Clean up	6.1	Unused materials stacked/stored.
		6.2	Work area cleared.
		6.3	Waste disposed of using appropriate method to NEPA requirements.
		6.4	Tools and equipment cleaned, maintained and stored.

RANGE OF VARIABLES

This unit applies to the preparation processes carried out prior to and during the demolition of a building.

Construction processes include:

- preparation for protective barriers
- erection of safety fences
- erection of solid panelled fencing/hoarding
- installation of dust blankets
- worksite preparation

Demolition sites include:

- buildings on part of a block
- buildings occupying all of a block
- interiors of buildings

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Personal protective equipment may include:

- overalls
- jacket
- waterproof pants and jacket
- boots
- gum boots
- hard hat
- safety goggles/glasses
- ear plugs/muffs
- gloves
- dust masks/respirators

Tools may include but are not limited to:

- hammers
- hand and power saws
- shovels
- fencing bars
- staplers
- chisels
- picks
- brooms
- cutting knife

Material item may include:

- timber
- blanket sheeting
- plywood
- steel fencing

Plant and equipment may include but are not limited to:

- air compressor and hoses
- pneumatic picks, rock-breakers
- wheelbarrows
- ladders

Work is to be undertaken as part of a team under s upervision with instructions being part of supervisor's directions, either verbal or written.

OH&S requirements to be in accordance with Statutory Legislation and regulations.

Reporting of faults may be verbal or written.

EVIDENCE GUIDE

Competency is to be demonstrated by carrying out safe and efficient preparation and construction processes in preparing for the demolition of a building using any of the listed range of variables.

(1) Critical Aspects of Evidence

It is essential that competence is obse rved in the following aspects:

- demonstrate compliance with OH&S regulations applicable to workplace operations
- indicate compliance with organisational policies and procedures including Quality Assurance requirements
- carry out correct procedures prior to a nd during construction and demolition processes
- demonstrate safe and effective operational use of tools, plant and equipment
- interactively communicate with others to ensure safe and effective workplace operations

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(2) Pre-requisite Relationship of Units

- BCGCOR0011A Carry out OH&S requirements
- BCGCOR0051A Use hand and power tools
- BCGCOR0061A Use small plant and equipment

(3) Underpinning Knowledge and Skills

Knowledge
Knowledge of:

- workplace and equipment safety requirements
- portable power tools
- hand tools and equipment
- materials
- materials handling
- use of plant and equipment
- drawings and written instructions
- workplace communication

Skills
The ability to:

- work safely to instructions
- use power tools and hand tools
- handle material
- select material
- communicate effectively

(4) Resource Implications

The following resources should be made available:

- demolition site
- hand and power tools appropriate to construction process
- plant and equipment appropriate to construction and demolition processes
- appropriate materials for construction activities

(5) Method of Assessment

Competency should be assessed while work is undertaken under direct supervision with regular checks, but may include some autonomy when working as part of a team.

Competency in this unit may be determined concurrently, based on integrated project work.

Assessment may be by intermittent checking at the various stages of the job application in accordance with the performance criteria, or may be at the completion of each process.

(6) Context of Assessment

Competency shall be assessed in the workplace or simulated workplace environment in accordance with work practices and safety procedures.

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CRITICAL EMPLOYABILITY SKILLS

Three levels of performance denote level of competency required to perform a task. These levels do not relate to the NCTVET Qualification Framework. They relate to the seven areas of generic competency that underpin effective workplace practices.

Levels of Competency		
Level 1.	Level 2.	Level 3.
• Carries out established processes • Makes judgement of quality using given criteria	• Manages process • Selects the criteria for the evaluation process	• Establishes principles and procedures • Evaluates and reshapes process • Establishes criteria for evaluation

Collect, analyse and organise information	Level 1	
Communicate ideas and information	Level 1	
Plan and organise activities	Level 1	
Work with others and in team	Level 1	
Use mathematical ideas and techniques	Level 1	
Solve problems	Level 1	
Use technology	Level 1	

Please refer to the Assessment Guidelines for advice on how to use the Critical Employability Skills.

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BCGMAS0181A: Mix cementitous materials (mortar and concrete)

Competency Descriptor: This unit deals with the skills and knowledge required to quantify and mix cementitous materials, and applies to individuals working in masonry trades.

Competency Field: General Construction

ELEMENT OF COMPETENCY	PERFORMANCE CRITERIA
1. Plan and prepare work	1.1 Quality Assurance requirements of company's construction operations recognised and adhered to.
	1.2 Occupational Health and Safety (OH&S) requirements for workplace environment and for mixing concrete/mortar identified and adhered to.
	1.3 Appropriate personal protective equipment selected, correctly fitted and used.
	1.4 Tools and equipment selected are consistent with requirements for batching and mixing concrete or mortar, are checked for serviceability and any faults identified reported to supervisor.
	1.5 Where required, surface for hand mixing concrete or mortar is prepared according to work instruction
2. Select and batch materials for mixing	2.1 The correct type and quality materials are identified and selected as instructed.
	2.2 Materials transported and handled in a manner to prevent wastage/cause health and safety hazards
	2.3 Materials are batched for mixing according to instruction given for quantity and ratio of mix.
	2.4 Materials for manual mixing are spread out on mixing bed according to type of mix required (concrete or mortar).
	2.5 Materials for machine mixing are placed in machine in accordance with recommended procedure –water in first.
	2.6 Sand for mortar mix is sifted with specified grade sieve wire

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		2.7	Where required, additives are selected according to mi x requirements or as instructed.
3.	Mix concrete	3.1	The cement is uniformly mixed with aggregates and evenly distributed.
		3.2	The concrete meets specified slump test and workability.
		3.3	Wastage of materials is prevented or minimised during hand mixing process.
4.	Mix mortar	4.1	The mortar is uniformly mixed, has appropriate consistency, plasticity and is workable
		4.2	Mixing techniques applied prevented or minimised wastage of materials.
5.	Clean up	5.1	Area cleared and waste material disposed of safely.
		5.2	Tools and equipment cleaned, maintained and stored.

RANGE STATEMENT

This unit covers the mixing of both concrete and mortar for application to form masonry structures using both cement mixers and manual operations.

Quality Assurance requirements may include:

- workplace operations and procedures
- quality of materials
- control of handling procedures
- use and maintenance of equipment
- attention to work specifications
- specification of concrete mix
- specification of mortar mix

Materials:

- sand
- coarse aggregate
- Portland cement
- Additives
- Colouring (where appropriate)

OH&S requirements to be in accordance with Statutory Legislation and regulations and may include:

- workplace environment and safety
- protective clothing and equipment
- use of tools and equipment
- handling of materials
- working platforms and scaffolding
- safety hazards

Personal protective equipment may include:

- safety goggles/glasses
- boots
- gloves
- dust masks/respirators
- hard hat
- overalls

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Tools and equipment may include but are not limited to:

- wheel barrow
- shovel
- measuring box
- water hose
- motorised transporting machine

Types of mix:

- concrete
- mortar for block laying
- rough cast mortar
- rendering mortar
- pebble-dash mortar

EVIDENCE GUIDE

Competency is to be demonstrated by the batching and mixing of concrete and mortar by hand and machine.

(1) Critical Aspects of Evidence

Competence is to be observed in the following critical aspects:

- demonstrate compliance with Occupational Health and Safety regulations applicable to worksite operations
- select and use appropriate tools and equipment for mixing cementitous materials
- apply organisational quality procedures and process within context of preparing concrete and mortar.
- Interpret work instructions with respect to proportion and ratio of mix
- identify typical faults and problems that occur and necessary action taken to rectify
- interactively communicate with others to ensure safe and effective work procedures
- complete the mixing of concrete and mortar to work specifications

(2) Pre-requisite Relationship of Units

- BCGCOR0001A Carry out interactive communication
- BCGCOR0041A Carry out measurements and calculations
- BCGCOR0051A Use hand and power tools
- BCGMAS0061A Use small plant and equipment

This unit may concurrently be assessed with:

- BCGCOR0051A Use hand and power tools
- BCGMAS0061A Use small plant and equipment

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(3) Underpinning Knowledge and Skills

Knowledge
Knowledge of:

- workplace and equipment safety requirements including regulations, codes and standards
- hand tools and equipment for preparing concrete and mortar
- materials handling
- measurement and calculation relative to batching of materials
- mortar mix composition
- concrete constituents and ratio of mix
- range of mortar additives including plasticisers and their application
- workplace communications

Skills
The ability to:

- work safely
- read and interpret work instructions
- use tools and equipment
- select materials
- measure and calculate ratio and proportion
- communicate effectively
- organise work
- batch concrete and mortar
- mix concrete and mortar by hand
- mix concrete and mortar using machine

(4) Resource Implications

The following resources should be provided:

- workplace location
- tools, plant and equipment appropriate for mixing concrete and mortar
- materials for mixing concrete and mortar

(5) Method of Assessment

Competency should be assessed through direct observation of practical application and questions related to underpinning knowledge.

Competency should be assessed under general guidance checking at various stages of the process and at completion of the activity against performance criteria and specifications.

(6) Context of Assessment

Competency may be assessed in the workplace or simulated workplace setting.

Assessment should be conducted while tasks are undertaken either individually or as part of a team under limited supervision.

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CRITICAL EMPLOYABILITY SKILLS

Three levels of performance denote level of competency required to perform a task. These levels do not relate to the NCTVET Qualifications Framework. They relate to the seven areas of generic competency that underpin effective workplace practices.

Levels of Competency		
Level 1.	Level 2.	Level 3.
• Carries out established processes • Makes judgement of quality using given criteria	• Manages process • Selects the criteria for the evaluation process	• Establishes principles and procedures • Evaluates and reshapes process • Establishes criteria for evaluation

Collect, analyse and organise information	Level 1	
Communicate ideas and information	Level 1	
Plan and organise activities	Level 1	
Work with others and in team	Level 1	
Use mathematical ideas and techniques	Level 1	
Solve problems	Level 1	
Use technology	Level -	

Please refer to the Assessment Guidelines for advice on how to use the Critical Employabilit y Skills

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BCGCAR0202A: Assemble simple partition frames

Competence Descriptor: This unit deals with the skills and knowledge required to effectively assemble simple partition frames from timber or metal, and applies to individuals working in the erection of framed building structures.

Competency Field: General Construction

ELEMENT OF COMPETENCY	PERFORMANCE CRITERIA	
1. Plan and prepare work	1.1	Quality Assurance requirements of company's construction operations recognised and adhered to.
	1.2	Occupational Health & Safety requirements recognised and adhered to in accordance with application tasks and workplace environment.
	1.3	Material requirements identified from instructions/job drawings and specifications.
	1.4	Appropriate personal protective equipment selected, correctly fitted and used.
	1.5	Tools and equipment selected to carry out processes consistent with job requirements, checked for serviceability and any faults reported to supervisor.
	1.6	Fixing/fastenings selected to specifications and job requirements.
2. Select materials and cut components	2.1	Materials obtained from store or stack to quantity and specification requirements.
	2.2	Required lengths accurately marked or machine stops set to requirements of cutting list.
	2.3	Docking/drop saw used to accurately cut one or multiple components to length.
	2.4	Cut components distributed and stacked to suit job location and sequence of construction.

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3.	Assemble frames/partitions	3.1	Locations for frame member connections marked/prepared to designed measurement spacings.
		3.2	Fixing/fastenings installed securing each junction of frame members tight together, flush on partition face and within + or – 2mm of set-out marks.
		3.3	Frame/partition assembled and secured square to specification.
		3.4	Pre-assembled frames/partitions distributed to appropriate location to instructions.
		3.5	Components of frames/partitions impractical to pre-assemble distributed to location as directed by supervisor.
4.	Clean-up	4.1	Area cleaned free of debris.
		4.2	Waste and unwanted material disposed of safely.
		4.3	Unused materials stored/stacked.
		4.4	Tools and equipment cleaned, maintained and stored.

RANGE STATEMENT

This unit applies to the as sembling of simple partition wall frames.

Quality Assurance requirements may include:

- safe working operations
- quality of materials
- control of handling procedures
- attention to specifications

OH&S requirements to be in accordance with Statutory Legislation and regulations and may include:

- workplace environment
- protective clothing
- working platforms
- use of tools and equipment
- hazard control
- handling of materials

Material sections used for construction of frames include:

- timber
- light steel
- aluminium

Personal protective equipment may include:

- overalls
- boots
- gloves
- safety goggles/glasses
- ear plugs/muffs
- dust masks/respirators
- hard hat/cap
- jacket

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Tools and equipment may include but are not limited to:

- measuring tape/rule
- hammer
- docking saw/drop saw
- jigs/stops
- power drills/screwdrivers
- saw stools
- clamps
- squares
- pop riveter
- nail gun

Types of fittings/fasteners to be used is dependent on type on material being joined may and include:

- nails
- screws
- self tapping screws
- pop rivets

Work is to be undertaken as part of a team under indirect supervision, with instructions being verbal or written as part of supervisor's directions.

Report of faults may be verbal or written.

EVIDENCE GUIDE

Competency is to be demonstrated by the safe and effective preparation and assembly of partition frames using any two of the separate types of different materials listed within the range statement.

(1) Critical Aspects of Evidence

It is essential that competence be observed in the following aspects:

- demonstrate compliance with Occupational Health and Safety regulation applicable to workplace operations
- show compliance with organisational policies and procedures including Quality Assurance requirements
- adopt and carry out correct procedures prior to and during application of assembling processes
- demonstrate safe and effective operational use of tools, plant and equipment
- show particular attention to accuracy of marking, cutting and assembling members
- interactively communicate with others to ensure safe and effective work op erations

(2) Pre-requisite Relationship of Units

- BCGCOR0051A Use hand and power tools
- BCGCOR0061A Use small plant and equipment
- BCGCAR0161A Prepare for carpentry construction

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(3) Underpinning Knowledge and Skills

Knowledge
Knowledge of:

- workplace and equipment safety requirements
- drawings and specifications
- portable power tools
- hand tools and equipment
- materials relevant to frame assembly
- materials handling
- measurement and calculation
- fixing and fasteners consistent with framework requirements
- workplace communication

Skills
The ability to:

- work safely to instructions
- interpret drawings and specifications
- use power and hand tools
- handle material
- select material
- measure relative to the process
- communicate effectively

(4) Resource Implications

The following resources should be made available:

- construction materials relevant to frame construction
- hand and power tools appropriate to frame assembly process
- plant and equipment appropriate to frame assembly process
- suitable work area appropriate to frame assembly process
- plans and specifications appropriate to construction activity

(5) Method of Assessment

Competency should be assessed while work is being done under limited supervision with regular checks, but may include some autonomy when working as part of a team.

Competency in this unit may be determined concurrently, based on integrated project work.

Assessment may be by intermittent checking at the various stages of the job application in accordance with the performance criteria, or may be at the completion of each process.

(6) Context of Assessment

Competency should be assessed in the workplace or simulated workplace environment in accordance with work practices and safety procedures.

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CRITICAL EMPLOYABILITY SKILLS

Three levels of performance denote level of competency required to perform a task. These levels do not relate to the NCTVET Qualifications Framework. They relate to the seven areas of generic competency that underpin effective workplace practices.

Levels of Competency		
Level 1.	Level 2.	Level 3.
• Carries out established processes • Makes judgement of quality using given criteria	• Manages process • Selects the criteria for the evaluation process	• Establishes principles and procedures • Evaluates and reshapes process • Establishes criteria for evaluation

Collect, analyse and organise information	Level 1	
Communicate ideas and information	Level 1	
Plan and organise activities	Level 1	
Work with others and in team	Level 1	
Use mathematical ideas and techniques	Level 1	
Solve problems	Level 1	
Use technology	Level 1	

Please refer to the Assessment Guidelines for advice on how to use the Critical Employability Skills.

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BCGCAR0252A: Erect and strip formwork for concrete work

Competency Descriptor: This unit deals with the skills and knowledge required to effectively erect, strip and store formwork, and applies to individuals working in the casting of concrete to form concrete structures.

Competency Field: General Construction

ELEMENT OF COMPETENCY	PERFORMANCE CRITERIA
1. Plan and prepare work	1.1 Quality Assurance requirements of company's construction operations recognised and adhered to.
	1.2 Occupational Health and Safety (OH&S) requirements associated with application tasks and workplace environment recognised and adhered to.
	1.3 Location(s) of required formwork established from drawings and instructions.
	1.4 Formwork components/materials selected to instructions consistent with job requirements.
	1.5 Appropriate personal protective equipment selected, correctly fitted and used.
	1.6 Tools and equipment selected consistent with job requirements, checked for serviceability and any faults reported to supervisor.
	1.7 Fixing/fasteners selected to instruction and used consistent with construction requirements of job.
2. Assist with the erection of formwork	2.1 Work area cleared and surface prepared to instruction for safe erection of formwork.
	2.2 Assistance provided with setout of formwork to requirements of drawings and specifications.
	2.3 Assistance provided with assembling and erection of formwork to specifications.
	2.4 Block outs and cast in-services installed to specified locations.

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		2.5	Debris, sawdust and other waste material safely removed from completed formwork.
		2.6	Release agent applied to formwork face to manufacturer's specifications.
3.	Strip formwork	3.1	Edge boxing and bracing/strutting support removed carefully, safely and sequentially.
		3.2	Timber components safely de-nailed, cleaned and stored/stacked for re-use or removal from site.
		3.3	Steel components cleaned, oiled and stored/stacked to manufacturer's recommendations for maintenance.
		3.4	Damaged formwork components salvaged or discarded after stripping.
4.	Clean up	4.1	Loose debris and waste material removed and disposed of safely.
		4.2	Tools and equipment cleaned, maintained and stored.

RANGE STATEMENT

This unit applies to assisting with the construction, erection or modification of formwork for concrete work in an on-site environment.

Work is undertaken as part of a team under supervision where instructions would be part of supervisor's directions, either verbal or written.

Formwork type to include:

- slab on ground
- retaining walls

Formwork systems may include:

- timber
- steel
- composite construction

Quality Assurance requirements may include:

- work procedures
- safety requirements
- control of handling
- use of plant and equipment
- specifications of concrete work

OH&S requirements to be in accordance with Statutory Legislation and Regulations and may include:

- protective clothing and equipment
- worksite environment and safety
- use of tools and equipment
- emergency procedures

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Tools and equipment may include but are not limited to:

- tool belts
- hammer
- power saw
- builders' line
- form oil applicator
- mop
- spanners
- measuring tape
- impact gun
- pinch bars
- hand saws
- cutting knife
- brooms
- shovels

Personal protective equipment may include:

- overalls
- jacket
- hard hat
- safety goggles
- safety boots
- gloves
- ear muffs

Assisting with assembling and erecting may involve but is not limited to:

- cutting material
- holding material for fixing
- fixing material
- lifting form into place
- assembling system components
- tightening connections
- holding of block outs or cast-in services for securing

FIXING AND FASTENERS MAY INCLUDE:

- nails
- screws
- self tapping screws
- bolts
- patented clips
- brackets

Assisting with setting out may involve:

- measuring with a tape
- making marks
- marking material square

Debris and other waste may include:

- half cut material
- cardboard
- paper

Reporting of faults may be verbal or written.

EVIDENCE GUIDE

Competency is to be demonstrated by the safe and effective erection and dismantling of at least two separate types of material systems, from those listed within the range statement, appropriate to the work orientation.

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(1) Critical Aspects of Evidence

It is essential that competence be observed in the following aspects:

- demonstrate compliance with Occupational Health and Safety regulations applicable to workplace operations
- indicate compliance with organisational policies and procedures including Quality Assurance requirements
- carry out correct procedures prior to and during construction process
- demonstrate safe and effective operational use of tools and equipment
- provide effective assistance to setting out and assembling and erecting formwork
- demonstrate particular attention and care in stripping formwork
- interactively communicate with others to ensure safe and effective workplace operations

(2) Pre-requisite Relationship of Units

- BCGCOR0011A Carry out OH&S requirements
- BCGCOR0051A Use hand and power tools
- BCGMAS0101A Carry out concrete work to simple forms

(3) Underpinning Knowledge and Skills

Knowledge
Knowledge of:

- workplace and equipment safety requirements
- formwork for concrete
- portable power tools
- hand tools and equipment
- materials related to formwork construction
- materials handling
- measurement and calculation
- drawings/specifications
- levelling equipment
- fixing and fasteners

Skills
The ability to:

- work safely to instructions
- use power tools and hand tools
- handle formwork materials
- select materials appropriate to construction of formwork
- measure relative to construction of formwork
- fix material
- communicate effectively
- use simple levelling equipment

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(4) Resource Implications

The following resources should be made available:

- construction materials relevant to construction of formwork
- hand tools and power tools appropriate to construction and stripping processes
- plant and equipment appropriate to construction processes
- suitable work area appropriate to concreting process

(5) Method of Assessment

Competency should be assessed while work is bein g done under direct supervision with regular checks, but may include some autonomy when working as part of a team.

Assessment should be by direct observation of tasks and questioning related to underpinning knowledge.

Assessment may be by intermittent checking at the various stages of the job application in accordance with the performance criteria, or may be at the completion of each process.

(6) Context of Assessment

Competency should be assessed in the workplace or simulated workplace environment in accordance with work practices and safety procedures.

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CRITICAL EMPLOYABILITY SKILLS

Three levels of performance denote level of competency required to perform a task. These levels do not relate to the NCTVET Qualifications Framework. They relate to t he seven areas of generic competency that underpin effective workplace practices.

Levels of Competency		
Level 1.	Level 2.	Level 3.
• Carries out established processes • Makes judgement of quality using given criteria	• Manages process • Selects the criteria for the evaluation process	• Establishes principles and procedures • Evaluates and reshapes process • Establishes criteria for evaluation

Collect, analyse and organise information	Level 1	
Communicate ideas and information	Level 1	
Plan and organise activit ies	Level 1	
Work with others and in team	Level 1	
Use mathematical ideas and techniques	Level 1	
Solve problems	Level 1	
Use technology	Level 1	

Please refer to the Assessment Guidelines for advice on how to use the Critical Employability Skills.

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BCGSTW0262A: Carry out steel-fixing

Competency Descriptor: This unit deals with the skills and knowledge required to effectively fabricate and place concrete reinforcement to formworks and footings, and applies to individuals carrying out steel-fixing work in building and construction industry.

Competency Field: General Construction

ELEMENT OF COMPETENCY		PERFORMANCE CRITERIA	
1	Plan and prepare work	1.1	Quality Assurance requirements of company's construction operations recognised and adhered to.
		1.2	OH&S requirements for application tasks and workplace environment recognised and adhered to.
		1.3	Reinforcement, type of fixing and locations identified from instructions/reinforcement schedule, job drawings and specifications.
		1.4	Formwork/excavation checked for completion and conformity to receive reinforcement.
		1.5	Appropriate personal protective equipment selected, correctly fitted and used.
		1.6	Tools and equipment selected consistent with job requirements, checked for serviceability and any faults reported to supervisor.
		1.7	Delivered reinforcement checked for correct size type and quantities against reinforcement schedule/details shown in job detail drawings.
2	Prepare for reinforcement placement	2.1	Reinforcement bars cut and bent to required set -out and drawing details.
		2.2	Bars tied to designed configuration from drawings.
		2.3	Reinforcement sheets cut to required sizes, where applicable.
		2.4	Stiffening rods attached to panels to instructions as requir ed to facilitate handling processes.

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		2.5	Bar chairs/spacers located to requirements of reinforcement schedule and job drawings.
3	Place and fix reinforcement	3.1	Fabric reinforcement sheets positioned correctly in accordance with approved drawings and schedule.
		3.2	Reinforcement bars located according to specification and positioned in accordance with approved drawings and schedule.
		3.3	Reinforcement correctly placed using bar chairs, ligatures and spacers according to specification and schedule.
		3.4	Reinforcement fabric and/or bars tied and/or welded in correct placement in accordance with approved drawings/job specification and AS1554.3.
		3.5	Cast-in items secured to reinforcement to specifications.
		3.6	Ends of protruding reinforcement covered and protected in accordance with specifications.
4	Inspect reinforcement prior to concrete pour	4.1	Location and position of ties and/or welded fabric/bar reinforcement checked for accuracy and spacing before concrete placement.
5	Clean up	5.1	Area cleared to specification.
		5.2	Waste material removed and placed in job waste bins or rubbish stockpiles.
		5.3	Tools and equipment cleaned, maintained and stored.

RANGE STATEMENT

This unit applies to the fabrication and placement of steel reinforcing to concrete forms and excavations for footings on site.

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Forms for concrete structural members and footing excavations may include:

- beam footings
- beams
- slab on ground
- suspended slabs
- columns
- stairs
- pads
- walls

Reinforcing may include:

- deformed bars
- plain rods
- mesh sheets of plain bars
- mesh sheets of deformed bars

Personal protective equipment may include:

- safety goggles/glasses
- boots
- gloves
- respirators
- hard hat

Tools and equipment may include but are not limited to:

- bolt cutters
- hacksaw
- wire nippers
- tie wire spool
- welding equipment
- measuring tape/rule
- reinforcement benders
- mesh guillotine
- range of general hand and power tools

Quality Assurance requirements may include:

- preparation of reinforcing
- placement and support
- concrete coverage
- control of handling

OH&S requirements to be in accordance with Statutory Legislation and regulations and may include:

- protective clothing and equipment
- cutting and handling of material
- working from scaffolding
- using tools and equipment
- worksite environment and safety
- handling of materials

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Welding of reinforcement fabric and/or bars to be in accordance with:

- AS1554.3 – 1983 Welding of Reinforcing Steel

Instructions and reporting of faults may be verbal or written, with instructions being part of a s upervisor's directions.

Work is to be undertaken in a team situation under supervision.

EVIDENCE GUIDE

Competence is to be demonstrated by the safe and effective placement of reinforcing to at least three (3) of the separate types of structures/member s/footings listed within the range of variables.

(1) Critical Aspects of Evidence

It is essential that competence be observed in the following aspects:

- demonstrate compliance with Occupational Health and Safety regulations applicable to workplace operations
- show compliance with organisational policies and procedures
- select and use appropriate processes, tools and equipment
- apply organisational quality procedures and processes within the context of fixing steel reinforcing
- check materials for conformity with specifications and job requirements
- Identify and follow assembly location and placement sequence
- demonstrate safe and effective use of tools and equipment and handling of materials
- place and tie/weld reinforcement to specification
- interactively communicate with others to ensure safe and effective operations in fixing the reinforcing

(2) Pre-requisite Relationship of Units

- BCGCOR0011A Carry out OH&S requirements
- BCGCOR0051A Use hand and power tools
- BCGCOR0061A Use small plant and equipment

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(3) Underpinning Knowledge and Skills

Knowledge
Knowledge of:

- workplace and equipment safety requirements
- formwork for concrete
- portable power tools, hand tools
- plant and equipment
- materials relevant to steel-fixing
- materials handling
- measurement and calculation
- drawings and specifications
- reinforcement schedule
- appropriate steel-fixing procedures and legislative requirements

Skills
The ability to**:**

- work safely to instructions
- interpret drawings and specifications/instructions
- use power tools and hand tools
- handle materials
- select materials
- measure relative to the process
- communicate effectively

(4) Resource Implications

The following resources should be made available:

- reinforcement materials appropriate to construction process
- hand tools and power tools appropriate to steel fixing process
- plant and equipment appropriate to steel fixing process
- suitable formwork or excavation appropriate to construction process

(5) Method of Assessment

Competence should be assessed through direct observation of tasks a nd questions related to underpinning knowledge.

Competence should be assessed under general guidance checking at various stages of the process and at completion of the activity against performance criteria and specifications.

(6) Context of Assessment

Competency may be assessed in the workplace or simulated workplace setting.

Assessment should be while tasks are undertaken either individually or as part of a team under limited supervision.

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CRITICAL EMPLOYABILITY SKILLS

Three levels of performance denote level of competency required to perform a task. These levels do not relate to the NCTVET Qualification Framework. They relate to the seven areas of generic competency that underpin effective workplace practices.

Levels of Competency		
Level 1.	Level 2.	Level 3.
• Carries out established processes • Makes judgement of quality using given criteria	• Manages process • Selects the criteria for the evaluation process	• Establishes principles and procedures • Evaluates and reshapes process • Establishes criteria for evaluation

Collect, analyse and organise information	Level 2	
Communicate ideas and information	Level 1	
Plan and organise activities	Level 2	
Work with others and in team	Level 2	
Use mathematical ideas and techniques	Level 1	
Solve problems	Level 1	
Use technology	Level 1	

Please refer to the Assessment Guidelines for advice on how to use the Critical Employability Skills.

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BCGCAR0312A: Use static machines

Competency Descriptor: This unit deals with the skills and knowledge required to effectively prepare and use various types of static machines, and applies to individuals working with carpentry/joinery/masonry/ancillary equipment in the construction industry.

Competency Field: General Construction

ELEMENT OF COMPETENCY		PERFORMANCE CRITERIA	
1.	Identify static machines, their operation and safety requirements	1.1	Types and functions of static machines used in offsite production identified.
		1.2	Method of operation for `machines identified and understood.
		1.3	Occupational Health and Safety (OH&S) requirements for guarding and switches identified.
		1.4	Occupational Health and Safety (OH&S) requirements for personal protective equipment associated with using machines identified.
		1.5	Quality Assurance requirements of company's machining operations recognised and adhered to.
2.	Prepare machine for use	2.1	OH&S requirements for preparing and using static machines recognised and adhered to.
		2.2	Appropriate personal protective equipment selected, correctly fitted and used.
		2.3	Machine set up to required operating process and setting with fences/guides locked in position.
		2.4	Safety guards/shields checked and adjusted where required according to the National OH&S standards.

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3.	Operate machine	3.1	Machine start up procedure is carried out to manufacturer's recommendations.
		3.2	Material fed to machine, where applicable, in accordance with manufacturer's recommendations and safe handling procedures.
		3.3	Material set up and fixed in place, where applicable for mobile machine in moving table operations, in accordance with manufacturer's recommendations.
		3.4	Machine operated in accordance with designed capacity and purpose, and to manufacturer's specifications and OH&S requirements.
		3.5	Machine shut down procedure carried out to manufacturer's recommendations.
4.	Maintain machine and attachments	4.1	Machines maintained through regular servicing to manufacturer's operating manual.
		4.2	Faults identified and reported to responsible supervisor.
		4.3	Minor faults identified and corrected where applicable.
		4.4	Cutters/blades and attachments fitted and secured to manufacturer's specifications.
5.	Clean up	5.1	Machine cleaned and waste material disposed of safely.
		5.2	Cutters, blades and attachments cleaned, checked and stored.

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RANGE STATEMENT

This unit applies to the use of static machines, which are those affixed to a set l ocation for their operation.

OH&S requirements to be in accordance with Statutory and Regulations and may include:

Static machines include but are not limited to:

- rip saws
- band saws
- docking saws
- vertical and horizontal drills
- dimensional saws
- thicknessers
- buzzers
- spindle moulders
- morticers
- multi borers
- table sanders
- grinders
- polishers
- multi functional cutter/grinder/polisher
- shapers
- diamond saws
- travelling beam saws
- multi bladed saws

Quality assurance requirements may include:

- workplace operations and procedures
- quality of materials used in machining operations
- control of handling procedures
- use and maintenance of machines
- attention to specifications of work
- workplace environment and safety
- protective clothing and equipment
- safety switches on machi nery
- maintenance of machines
- use of tools and equipment
- handling and feeding of materials
- guarding on machinery
- safe use of machines

Personal protective equipment may include:

- boots
- safety glasses/goggles
- ear plugs/muffs
- dust masks/respirators
- gloves
- cap

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Tools and equipment for maintenance and setting up may include but are not limited to:

- oil cans
- grease guns
- spanners
- feeler gauges
- packers
- wedges
- screwdrivers
- measuring tape/rule
- hammer
- spirit level
- squares

Reporting of faults should be in accor dance with organisation's workplace procedures and may be verbal or written.

EVIDENCE GUIDE

Competency is to be demonstrated by the safe and efficient setting up and operating of at least three (3) separate types of machines from those listed in the rang e of variables statement.

(1) Critical Aspects of Evidence

It is essential that competence be observed in the following aspects:

- demonstrate compliance with Occupational Health and Safety regulations applicable to workplace and machine operations
- indicate compliance with organisational policies and procedures including Quality Assurance requirements within the context of carrying out machining operations
- identify and appropriately apply manufacturer's recommendations in use of machine
- identify and correctly apply machine guard in operating machine
- carry out correct setting up procedures prior to use in accordance with carrying out machine operations
- carry out correct start up procedures
- demonstrate safe and effective operational use of machine
- carry out correct shut down/switch off procedures
- give attention to procedures for cleaning and maintaining of machine to requirements
- use of safe and correct procedures to place or remove cutters and blades

(2) Prerequisite Relationship of Units

- BCGCOR0051A Use hand and power tools
- BCGCOR0061A Use small plant and equipment

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(3) Underpinning Knowledge and Skills

Knowledge
Knowledge of:

- workplace and equipment safety requirements including relevant statutory regulations
- types of machines and their operation
- safety considerations for operating of machinery
- maintenance of machines
- cutter, blades and associated accessories
- tools and equipment
- materials
- materials handling

Skills
The ability to:

- work safely to instructions
- set up for machine operation
- operate machine
- use hand tools and equipment
- handle material
- stack material
- communicate effectively

(4) Resource Implications

The following resources should be made available:

- workshop location
- access to a range of static machines
- materials appropriate to work orientation machinery

(5) Method of Assessment

Competency should be assessed while work is being done under direct supervision.

Assessment may involve:

- observation of application work
- questioning related to underpinning knowledge

Assessment may be by intermittent checking at the various stages of the job application in accordance with the performance criteria, or may be at the completion of each task associated with setting up and using machine.

(6) Context of Assessment

Competency should be assessed in the normal or simulated workplace environment in accordance with work and safety procedures.

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CRITICAL EMPLOYABILITY SKILLS

Three levels of performance denote level of competency required to perform a task. These levels do not relate to the NCTVET Qualifications Framework. They relate to the seven areas of generic competency that underpin effective workplace practices.

Levels of Competency		
Level 1.	Level 2.	Level 3.
• Carries out established processes • Makes judgement of quality using given criteria	• Manages process • Selects the criteria for the evaluation process	• Establishes principles and procedures • Evaluates and reshapes process • Establishes criteria for evaluation

Collect, analyse and organise information	Level 2	
Communicate ideas and information	Level 1	
Plan and organise activities	Level 2	
Work with others and in team	Level -	
Use mathematical ideas and techniques	Level 1	
Solve problems	Level 2	
Use technology	Level 2	

Please refer to the Assessment Guidelines for advice on how to use the Critical Employability Skills.

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BCGCAR0322A: Make set-outs

Competency Descriptor: This unit deals with the skills and knowledge required to effectively perform the tasks of setting out dimensions of work, and applies to individuals working in marking out standard or basic units of stock material in the production of components for construction.

Competency Field: General Construction

ELEMENT OF COMPETENCY		PERFORMANCE CRITERIA	
1.	Plan and prepare for set-out	1.1	Quality Assurance requirements of company's construction operations recognised and adhered to.
		1.2	Occupational Health and Safety (OH&S) requirements determined and adhered to in accordance with application tasks and workplace environment.
		1.3	Design and dimensions of unit determined from written instructions and drawings.
		1.4	Type of set-out to be undertaken, is determined.
		1.5	Material selected consistent with set-out requirements and prepared for marking.
		1.6	Tools and instruments selected to carry out processes consistent with set-out requirements.
2.	Make set-out for unit	2.1	Overall dimensions of unit and lines representing material thickness accurately marked on set-out.
		2.2	Details of cross-sectional dimensions of integral members accurately marked on set-out, where applicable.
		2.3	Methods of joining marked on set-out where applicable.
		2.4	Set-out of cross-sectional members of profiles cut accurately to form template shapes where applicable.
		2.5	Set-out identified by marking description/code of unit on completed set-out.

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3.	Store set-out	3.1	Set-out stored in identifiable and retrievable location.
		3.2	Area cleared and waste removed.
		3.3	Tools and instruments cleaned and stored.

RANGE STATEMENT

This unit applies to the making of set-outs to produce a product in accordance with the relevant work orientation.

Units to be set out are to be standard or basic type units of stock material produced by an organisation in any of the following production areas:

- timber joinery
- aluminium joinery
- fitments
- shop-fronts
- stairs
- stonework
- glasswork
- pre-cast concrete work

Set-outs include:

- full size dimensional illustrations
- full size sectional plans and elevations
- profiles of sections
- machining details
- lettering or decorative features

Quality assurance requirements may include:

- workplace operations and procedures
- attention to specifications of work
- making of set outs and templates

OH&S requirements to be in accordance with Statutory Legislation and regulations and may include:

- workplace environment and safety procedures
- protective clothing and equipment
- use of tools and equipment
- handling of materials

Tools and instruments may include but are not limited to:

- measuring tape/ruler
- squares
- scribers
- dividers/steel wing compasses
- straight edge
- curved templates
- set squares
- T-squares

Written instructions and drawings include:

- elevation and plan drawings
- provided specifications
- isometric drawings
- sketches
- typed or hand written notes
- verbal instructions

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Material for set-out include:

- plywood
- particle board
- paper
- cardboard
- zinc sheet
- aluminium sheet
- plastic sheet

Preparation of material for set-out include:

- cutting sheet material to practical size
- taping paper to backing base
- sanding off previous set-out or marks

EVIDENCE GUIDE

Competency is to be demonstrated by making a set -out complete and accurate in detail whereby from which all parts/components of a unit can be produced and marked.

(1) Critical Aspects of Evidence

It is essential that competence be observed in the following aspects:

- demonstrate compliance with Occupational Health and Safety regulations applicable to workplace operations
- indicate compliance with organisational policies and procedures including Quality Assurance requirements within the context of making set-outs
- indicate understanding of interpreting drawings and instructions
- select and use appropriate processes, tools and instruments for set-out task
- accurately set-out detailed information
- demonstrate correct use of instruments and tools in setting out angles and curves
- demonstrate accurate cutting of set-out shape, where applicable

(2) Prerequisite Relationship of Units

- BCGCOR0031A Draw and interpret simple drawings
- BCGCOR0041A Carry out measurements and calculations

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(3) Underpinning Knowledge and Skills

Knowledge
Knowledge of:

- workplace and equipment safety requirements
- working drawings and specifications
- set outs relevant to work orientation
- measuring and marking
- use of drawing/drafting equipment
- organisation's Quality Assurance requirements
- manufacturing processes
- tools and instruments
- set-out materials

Skills
The ability to:

- understand and interpret information from drawings and instructions
- use basic instruments and tools
- prepare for work application
- apply sound measuring and marking techniques
- set-out material
- record or mark identifying information
- communicate effectively

(4) Resource Implications

The following resources should be made available:

- workplace space to carry out processes
- set-out bench and set-out materials
- measuring and marking instruments
- tools and equipment for holding and cutting

(5) Method of Assessment

Competency should be assessed while work is being done under indirect supervision.

Assessment may be by intermittent checking at the various stages of the job application in accordance with the performance criteria, or may be at the completion of the set-out process.

(6) Context of Assessment

Competency should be assessed in the normal or simulated workplace environment and in accordance with work and safety procedures.

Guidelines will be in line with statutory agreements and specific policies and procedures.

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CRITICAL EMPLOYABILITY SKILLS

Three levels of performance denote level of competency required to perform a task. These levels do not relate to the NCTVET Qualifications Framework. They relate to the seven areas of gen eric competency that underpin effective workplace practices.

Levels of Competency		
Level 1.	Level 2.	Level 3.
• Carries out established processes • Makes judgement of quality using given criteria	• Manages process • Selects the criteria for the evaluation process	• Establishes principles and procedures • Evaluates and reshapes process • Establishes criteria for evaluation

Collect, analyse and organise information	Level 2	
Communicate ideas and information	Level 2	
Plan and organise activities	Level 2	
Work with others and in team	Level -	
Use mathematical ideas and techniques	Level 2	
Solve problems	Level 1	
Use technology	Level -	

Please refer to the Assessment Guidelines for advice on how to use the Critical Employability Skills.

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BCGCAR0662A: Erect/dismantle formwork

Competency Descriptor: This unit deals with the skills and knowledge required to prepare, erect and/or dismantle formwork, and applies to individuals working in carpentry and masonry trades in the construction industry.

Competency Field: General Construction

ELEMENT OF COMPETENCY	PERFORMANCE CRITERIA
1. Select system, plan and prepare for work	1.1 Quality Assurance requirements for company's construction operations recognised and adhered to.
	1.2 Occupational Health & Safety (OH&S) requirements for erecting and dismantling formwork and workplace environment recognised and adhered to.
	1.3 Location and requirements of formwork construction identified from job drawings of structural concrete members.
	1.4 Selection of formwork system determined in accordance with job requirements and available structural support.
	1.5 Material/system quantity requirements determined in accordance with formwork required and specifications for formwork construction.
	1.6 Appropriate personal protective equipment selected correctly fitted and used.
	1.7 Tools and equipment selected to carry out processes consistent with job requirements, checked for serviceability and any faults reported to supervisor.
	1.8 Key set out points/lines/profiles/grids placed accurately to the requirements of job drawings.
2. Prepare for formwork erection	2.1 Formwork shutters constructed to designed form requirements and specified dimensions.
	2.2 Formwork support system sequentially erected according to initial set out and specification for formwork for concrete.
	2.3 Scaffolding and/or hand railing erected where applicable to OH&S regulations and job requirements.

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		2.5	Support system set to correct height level and line within +/ - 2 mm over any 3-metre length.
3.	Erect formwork	3.1	Formwork for beams, drop panels, cantilevers etc. fabricated, positioned and fixed into place, according to specifications.
		3.2	Formwork for walls assembled, erected and fixed into place, plumb within +/- 2mm over 2.4 metres and to line within +/ - over any 3 metre length.
		3.3	Soffit formwork cut to length, fabricated, positioned and fixed into place within specifications.
		3.4	Edge boxing to formwork fixed in correct position and braced to plumb alignment.
		3.5	Cast-ins, inserts and penetration blocks installed to locations to specified requirements.
4.	Install metal decking as slab soffit	4.1	Sheets prepared, where required, to manufacturers and/or job specifications.
		4.2	Metal decking installed to area and secured where required in accordance with manufacturer's and job specifications.
		4.3	Intermediary support provided to metal decking where required, in accordance with design spec ifications.
		4.4	Support to decking adjusted to ensure specified soffit alignment.
5.	Inspect formwork	5.1	Erected formwork, and ensure that formwork support system is inspected for safety and quality of work in accordance with standards for formwork.
		5.2	Loose dirt, sawdust and other waste material removed safely with due care to the welfare of site personnel and public.
		5.3	Release agent applied to formwork in accordance with specifications.
		5.4	Formwork and support system supervised during co ncrete pour.

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6.	Stripping of formwork	6.1 Approval to remove formwork support system obtained from appropriate site authority.
		6.2 Edge boxing and braces carefully removed, denailed, cleaned and stored/stacked.
		6.3 Support system backed off to app ropriate height to loosen soffit decking.
		6.4 Formwork removed safely and sequentially, denailed and relocated or stored.
7.	Back prop formwork	7.1 Appropriate back propping system, selected where applicable, and installed according to standards and engineer's requirements.
8.	Clean up	8.1 All stripped formwork components removed from work area.
		8.2 Loose debris and waste material removed and placed into job waste bins or rubbish stockpiles.
		8.3 Formwork components re-used, de-nailed, where appropriate, cleaned and stored correctly.
		8.4 Tools and equipment cleaned, maintained and stored.

RANGE STATEMENT

This unit applies to all types of above ground constructed or systemised formwork to form reinforced concrete structure.

All formwork construction is to be in accordance with standards for formwork for concrete.

Formwork types include:

- columns
- walls
- beams
- floor slabs
- beams and slab
- drop panels
- stairways and landings

Formwork materials may include but not limited to:

- timber
- steel
- plywood
- hardboard
- composite materials
- metal decking

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Support systems may include:

- timber props
- timber bearers
- telescopic props
- steel sectional bearers
- steel frames

Personal protective equipment may include:

- safety goggles/glasses
- boots
- gloves
- hard hats
- respirators/dust masks

Tools and equipment may include but are not limited to:

- spanners
- measuring tape/rule
- form oil sprayer mop
- floor centres
- telescopic props
- levelling equipment
- string lines
- scaffolding
- nail guns
- power saws
- power drills
- air compressor and hoses
- power leads
- general hand tools

OH&S requirements to be in accordance with Statutory Legislation and Regulations and may include:

- protective equipment
- working platforms
- handling materials
- working from scaffolding
- safety hazards
- working with cranes
- use of plant and equipment

Quality Assurance requirements may include:

- work procedures
- safety requirements
- control of handling
- quality of materials
- detail to measurement
- soundness of construction
- specification finish

Preparation of metal decking sheets may include:

- cutting
- folding up ends
- forming tray ends

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Reporting of faults should be in accordance with company's workplace procedures and may be verbal or written.

Work to be carried out in a team situation and in accordance with all relevant statutor y regulations.

EVIDENCE GUIDE

Competency is to be demonstrated by erecting and dismantling formwork for a suspended slab, column, beam and wall proposed structures.

(1) Critical Aspects of Evidence

It is essential that competence be observed in the f ollowing aspects:

- demonstrate compliance with Occupational Health and Safety regulations applicable to workplace and formwork operations
- apply organisational quality procedures and processes within the context of erecting and dismantling formwork
- plan and sequence work in a logical manner
- select and use appropriate processes, tools and equipment
- construct and position formwork conforming to dimensions as specified in drawings and documentation
- select and use appropriate applications to ensure support struc ture rigid and stable
- give attention to accurate measurement, alignment and level and/or plumb of formwork
- clean and coat forms with release agent in preparation for placement of reinforcement
- avoid damage to forms when stripping through appropriate handli ng of materials
- identify common faults and problems that occur and necessary action taken to rectify
- interactively communicate with others to ensure that safe and effective processes are carried out

(2) Pre-requisite Relationship of Units

- BCGCOR0051A Use hand and power tools
- BCGCOR0071A Erect and dismantle restricted height scaffolding
- BCGCOR0081A Use simple levelling devices
- BCGCAR0161A Prepare for carpentry construction
- BCGCAR0252A Assist with erecting and stripping of formwork

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(3) Underpinning Knowledge and Skills

Knowledge
Knowledge of:

- workplace and equipment safety requirements including relevant statutory regulations and codes
- types of formwork
- formwork construction
- understanding of hydraulic pressure on formwork by concrete when placed
- National Standards for Formwork for Concrete
- company's quality system and role of individual within that system
- drawings and specifications
- tools and equipment
- materials
- fixing and fasteners
- calculation of material requirements
- measuring and levelling

Skills
The ability to:

- work safely
- interpret drawings and specifications
- organise work
- set out work
- use tools and equipment
- communicate effectively
- calculate material quantities
- measure and level relative to formwork
- fix materials

(4) Resource Implications

The following resources should be provided:

- workplace location for installation of formwork
- plant, equipment and tools appropriate to the construction and erection processes
- materials/system formwork appropriate to formwork construction
- drawings and specifications of concrete structural members and proposed formwork

(5) Method of Assessment

Competency should be through direct observation of application to tasks and questioning related to underpinning knowledge.

Competency should be assessed under general guidance checking at various stages of the process and at the completion of the activity against performance criteria and specifications.

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(6) Context of Assessment

Competency should be assessed in the normal or simulated workplace enviro nment.

Assessment should be while tasks are undertaken either individually or as part of a team under limited supervision.

CRITICAL EMPLOYABILITY SKILLS

Three levels of performance denote level of competency required to perform a task. These levels do not relate to the NCTVET Qualifications Framework. They relate to the seven areas of generic competency that underpin effective workplace practices.

Levels of Competency		
Level 1.	Level 2.	Level 3.
• Carries out established processes • Makes judgement of quality using given criteria	• Manages process • Selects the criteria for the evaluation process	• Establishes principles and procedures • Evaluates and reshapes • process • Establishes criteria for • Evaluation

Collect, analyse and organise information	Level 2	
Communicate ideas and information	Level 1	
Plan and organise activities	Level 2	
Work with others and in team	Level 2	
Use mathematical ideas and techniques	Level 3	
Solve problems	Level 2	
Use technology	Level 2	

Please refer to the Assessment Guid elines for advice on how to use the Critical Employability Skills.

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BCGMAS0922A: Cure concrete

Competency Descriptor: This unit deals with the skills and knowledge required to carry out concrete curing process, and applies to individuals working with concrete in particular the construction industry.

Competency field: General Construction

ELEMENT OF COMPETENCY		PERFORMANCE CRITERIA	
1	Select curing method	1.1	Quality Assurance requirements of company's concreting operations recognised and adhered to.
		1.2	OH&S requirements for workplace environment and curing concrete recognised and adhered to.
		1.3	Concrete curing method selected in accordance with engineer's specification and Concrete Structures.
2	Select curing and personal protective equipment	2.1	Curing equipment selected consistent with curing requirements and checked for sound and safe working order.
		2.2	Appropriate personal protective equipment selected, correctly fitted and used.
3	Cure concrete	3.1	Concrete cured to engineer's approval and in accordance with the National Building Codes and standard practice inc Concrete on Building.
		3.2	Curing agent/method maintained on concrete surface to specifications and, where applicable, in accordance with standards for Liquid Membrane Forming Curing Compounds for Concrete.
		3.3	Protection provided to concrete during curing process by isolating and/or barricading area.
4	Clean-up	4.1	Area of concrete cure cleared and waste material removed.
		4.2	Curing equipment cleaned, maintained to manufacturer's specifications and stored.

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RANGE STATEMENT

This unit applies to the curing of concrete in an on-site environment.

Curing methods may include:

- hosing
- sprinklers
- ponding
- applied chemical curing agent
- plastic film

Quality Assurance requirements may include:

- workplace operations and procedures
- control of handling procedures
- use and maintenance of equipment
- attention to specifications of work

OH&S requirements to be in accordance with Statutory Legislation and Regulations and may include:

- workplace environment and safety
- protective clothing and equipment
- use of tools and equipment
- handling of materials
- working platforms and scaffolding
- hazardous materials

Personal protective equipment may include:

- safety goggles/glasses
- boots
- gloves
- respirators/masks

Tools/equipment may include:

- hoses and sprinklers
- tarpaulins/covers
- rollers
- spray applicators

EVIDENCE GUIDE

Competency is to be demonstrated by carrying out the initial curing process to a nominated poured concrete section.

(1) Critical Aspects of Evidence

It is essential that competence be demonstrated in the critical aspects of:

- demonstrate compliance with Occupational Health and Safety regulations applicable to workplace and concrete pouring operations
- indicate compliance with organisational policies and procedures
- select and use appropriate processes, tools and equipment
- apply organisational quality procedures and processes within the context of placing and curing of concrete
- apply concrete curing method safely and effec tively to designed application
- interactive communicate with others to ensure safe and effective curing operations

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(2) Pre-requisite Relationship of Units

- BCGCOR0061A Use plant and equipment
- BCGMAS0101A Carry out concrete work to simple forms
- BCGMAS0292A Carry out concrete work

This competency may be assessed concurrently with:

- BCGMAS0892A Finish concrete

(3) Underpinning Knowledge and Skills

Knowledge
Knowledge of:

- workplace and equipment safety requirements including relevant statutory regulations and codes
- influence of curing process on strength of concrete
- methods of curing concrete
- safe handling of curing chemicals
- plant and equipment
- specifications

Skills
The ability to:

- work safely
- organise work
- use plant and equipment
- communicate effectively

(4) Resource Implications

The following resources should be provided:

- freshly poured concrete location.
- tools, plant and equipment, appropriate to curing processes.
- specifications for curing application.

(5) Method of Assessment

Competency should be assessed through direct observation of application to tasks and questions related to underpinning knowledge.

Competency should be assessed under general guidance checking at various stages of the process and at completion of the activity against pe rformance criteria and specifications.

(6) Context of Assessment

Competency may be assessed in the workplace or simulated workplace setting.

Assessment should be while tasks are undertaken either individually or as part of a team under limited supervis ion.

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CRITICAL EMPLOYABILITY SKILLS

Three levels of performance denote level of competency required to perform a task. These levels do not relate to the NCTVET Qualifications Framework. They relate to the seven areas of generic competency that underpin effective workplace practices.

Levels of Competency		
Level 1.	Level 2.	Level 3.
• Carries out established processes • Makes judgement of quality using given criteria	• Manages process • Selects the criteria for the evaluation process	• Establishes principles and procedures • Evaluates and reshapes process • Establishes criteria for evaluation

Collect, analyse and organise information	Level 2	To measure self-performance
Communicate ideas and information	Level 1	With members of the work team
Plan and organise activities	Level 2	For self
Work with others and in team	Level 1	In completing scheduled tasks
Use mathematical ideas and techniques	Level -	As an aid to measure and schedule tasks
Solve problems	Level-1	As an aid to self-development
Use technology	Level 1	To manage scheduling and completion of tasks

Please refer to the Assessment Guidelines for advice on how to use the Critical Employability Skills.

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BCGMAS1232A: Rough cast and render flat surfaces

Competency Descriptor: This unit deals with the skills and knowledge required to float and set coats to provide solid plaster finishes to flat surfaces, and applies to individuals working in masonry in the construction industry.

Competency Field: General Construction

ELEMENT OF COMPETENCY	PERFORMANCE CRITERIA
1. Plan and prepare work	1.1 Quality Assurance requirements of company's construction operations recognised and adhered to.
	1.2 Occupational Health and Safety (OH&S) requirements for workplace environment and preparing for and rendering surfaces recognised and adhered to.
	1.3 Delivered materials selected and checked against specifications/instructions for quantity and description.
	1.4 Appropriate personal protective equipment selected, correctly fitted and used.
	1.5 Tools and equipment selected consistent with requirements of applying float and setting coats for hard plaster to flat surfaces, checked for serviceability and any faults reported to supervisor.
	1.6 Safety hazards identified and correct procedures used to eliminate hazards and reduce risk to self and others according to OH&S legislation and company policy.
2. Prepare background of concrete, concrete block or brickwork surface	2.1 Background surface identified and wire-brushed if required.
	2.2 Dash coat mixed and applied liberally to wetted surface.
3. Apply float (using sand and cement) to flat surfaces	3.1 Applied coat roughcast (screeded) to plumb or level tolerance of +/- 2mm over 2.4 metres.
	3.2 Type of render used and applied to architect's specifications and relevant Building Standard Code.
	3.3 Floating cast coat applied and ruled off to screed.

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		3.4	Surface finished plumb/level and/or to alignment tolerance of +/- 2mm over 3metres.
		3.5	Heads reveals and sills finished square off wall face and back into opening.
		3.6	All internal angles, ceiling and floor lines accurately cut.
4.	Apply rough cast to piers	4.1	Floating coat applied using floating rules/profiles, dove pins or hooks so that face of pier is plumb and ruled off.
		4.2	Face squared off to form returns, rules removed and a plough form bull nose applied to external angles.
5.	Apply floating cast within metal beading	5.1	Metal beading fixed to base surface to form a panel with expansion joint so that panel is plumb and square in specified position.
		5.2	Panels finished with plaster and lime to a smooth, flat, fine finish.
6.	Apply setting coat to flat surfaces	6.1	Background surface prepared and cleaned free of residue then wetted down thoroughly.
		6.2	Thin scratch coat applied, using 60% plaster and 40% lime to architect specification.
		6.3	Second coat applied, 2-3mm thick and worked until firm.
		6.4	Fine finish coat applied and steel trowelled to smooth even finish to architect's specification.
7.	Clean up	7.1	Area cleared to job specification.
		7.2	Waste and unwanted material disposed of safely.
		7.3	Unused materials stored/stacked.
		7.4	Tools and equipment cleaned, maintained and stored.

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RANGE STATEMENT

This unit involves the application of floating and set coats to provide solid plaster finishes to flat surfaces which include, walls, reveals, sills, piers and columns.
Render mix to be in accordance with Building Standards – Internal Plastering on Solid Background

OH&S requirements to be in accordance with Statutory Legislation and Regulations and may include:

- workplace environment and safety
- fall safe protection
- protective clothing and equipment
- use of tools and equipment
- handling of materials
- working platforms and scaffolding

Quality Assurance requirements may include:

- workplace operations and procedures
- quality of materials
- control of handling procedures
- use and maintenance of equipment
- attention to specifications of work

Tools and equipment may include but are not limited to:

- measuring tape/rule
- spirit level
- squares
- trowels
- floats
- brushes
- screed boards
- scaffolding
- straight edge
- grinder
- concrete mixer
- mortar boards and stands
- shovels
- wheelbarrows
- hawks (hand board)
- joint rules
- small tools
- plumb bob
- mason's square
- buckets
- sieve
- power leads

Personal protective equipment may include:

- boots
- safety glasses/goggles
- dust masks/respirators
- gloves
- cap

Background surfaces for application include:

- concrete
- concrete blockwork
- brickwork
- stonework
- timber or metal lathing

Application may be to horizontal or vertical surfaces:

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Cleaning of surfaces may involve:

- wire brushing
- grinding
- blast cleaning
- chipping
- washing down

Dash coat may be applied using:

- trowel
- brush
- nozzle spray

Reporting of faults should be in accordance with company's workplace procedures and may be verbal or written.

EVIDENCE GUIDE

Competency is to be demonstrated by the performance of applying both floating and setting coats to provide a finished surface to either one of the backgrounds listed in the range of variables statement.

(1) Critical Aspects of Evidence

It is essential that competence be demonstrated in the following aspects.

- demonstrate compliance with Occupational Health and Safety regulations applicable to workplace and solid plastering operations
- display selection and safe use of appropriate processes, tools and equipment
- apply organisational quality procedures and processes within context of floating and setting solid plaster-flat surfaces
- locate surfaces and inspect for bonding requirements prior to application of coats
- determine surface finish from specification or site inspection
- check render mix conforms to specification Internal Plastering on Solid Backgrounds
- interactively communicate with others to ensure safe and effective work procedures
- check surface is finished plumb/level to tolerance of +/- 2mm over 2.4metres
- finish reveals and returns square to wall surface
- apply setting coat to achieve texture or finish specified
- mix render coat and apply in accordance with Building Standard and architect's specifications
- identify faults and problems that occur and necessary action taken to rectify

(2) Pre-requisite Relationship of Units

Pre-requisites for this unit are:

- BCGCOR0051A Use hand and power tools
- BCGCOR0071A Erect and dismantle restricted height scaffolding
- BCGMAS0141A Prepare for construction process (solid plastering)
- BCGCOR0212A Prepare surfaces
- BCGCOR0242A Carry out levelling

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(3) Underpinning Knowledge and Skills

Knowledge
Knowledge of:

- workplace and equipment safety requirements
- drawings and specifications
- mix composition
- render and setting coats
- additives including plasticisers, colour and waterproofing agents
- Building Code of Jamaica and Standard for materials and application
- materials
- tools and equipment
- calculation of material quantities

Skills
The ability to:

- work safely
- select and handle material safely
- organise work
- interpret drawings and specifications
- interpret documentation from a wide range of sources
- set out work
- use tools and equipment
- communicate effectively

(4) Resource Implications

The following resources should be provided:

- workplace location
- tools, plant and equipment suitable for applying float and set coats to flat surface
- scaffolding
- appropriate materials

(5) Method of Assessment

Competency should be assessed while tasks are undertaken.

Competency should be assessed through direct observation of the application process and questions related to underpinning knowledge.

(6) Context of Assessment

Competency may be assessed in the workplace or simulated workplace setting.

Assessment should be conducted while tasks are undertaken either individually or as part of a team under limited supervision.

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CRITICAL EMPLOYABILITY SKILLS

Three levels of performance denote level of competency required to perform a task. These levels do not relate to the NCTVET Qualifications Framework. They relate to the seven areas of generic competency that underpin effective workplace practices.

Levels of Competency		
Level 1.	Level 2.	Level 3.
• Carries out established processes • Makes judgement of quality using given criteria	• Manages process • Selects the criteria for the evaluation process	• Establishes principles and procedures • Evaluates and reshapes process • Establishes criteria for evaluation

Collect, analyse and organise information	Level 2	
Communicate ideas and information	Level 2	
Plan and organise activities	Level 2	
Work with others and in team	Level 1	
Use mathematical ideas and techniques	Level 2	
Solve problems	Level 2	
Use technology	Level 2	

Please refer to the Assessment Guidelines for advice on how to use the Critical Employability Skills.

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BCGMAS1242A: Apply solid render

Competency Descriptor: This unit deals with the skills and knowledge required to prepare and apply cement mortar to render masonry structures, and applies to individuals working in masonry in the building construction industry.

Competency Field: General Construction

ELEMENT OF COMPETENCY		PERFORMANCE CRITERIA	
1	Plan and prepare work	1.1	Quality Assurance requirements of company's construction operations recognised and adhered to.
		1.2	OH&S requirements for the workplace environment and preparing for and applying solid render recognised and adhered to.
		1.3	Area to receive solid render determined from job drawings.
		1.4	Correct mix for solid render determined from job specifications.
		1.5	Materials and required quantities calculated from job drawings and specifications.
		1.6	Appropriate personal protective equipment selected, correctly fitted and used.
		1.7	Tools and equipment selected consistent with re quirements for applying solid render to flat surfaces, checked for serviceability and any faults reported to supervisor.
2	Prepare surface area	2.1	Scaffolding erected in accordance with job requirements and OH&S regulations.
		2.2	Surface area to be ren dered prepared in accordance with job specifications.
		2.3	Dash coat mixed and applied liberally to wetted surface.
3	Mix materials for solid/render	3.1	Mortar for render mixed to designed proportion and consistency in accordance with the job specifica tions.

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		3.2	Render coat dotted and lined (screeded) to plumb or level tolerance of +/- 2mm over 2.4 metres.
4	Apply render	4.1	Render applied to dried splash, dotted and lined surface and screeded to correct thickness in accordance with job drawings and specifications.
		4.2	Screeded solid render trowelled to specify surface according to job finishes schedule.
		4.3	Surface finished plumb/level and to an alignment tolerance of +/-2mm over 3 metres.
5	Cure applied surface	5.1	Finished surface cured using curing method in accordance with the job requirements and architect's specifications.
6	Clean up	6.1	Work area cleared.
		6.2	Waste materials removed from job area and placed into job waste bins or rubbish stockpile.
		6.3	Unused materials stored.
		6.4	Tools and equipment cleaned, maintained and stored.

RANGE STATEMENT

This unit applies to the application of one or two -coat cement mortar render to masonry or concrete surfaces.

Render mix to be in accordance with specification.

Quality Assurance requirements may include:

- workplace operations and procedures
- quality of materials
- control of handling procedures
- use and maintenance of equipment
- attention to specifications of work

OH&S requirements to be in accordance with Statutory Legislation and Regulations and may include:

- workplace environment and safety
- fall safe protection
- protective clothing and equipment
- use of tools and equipment
- handling of materials
- working platforms and scaffolding

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Application may be to horizontal or vertical surfac es.

Background surfaces for application include:

- concrete
- concrete block-work
- brickwork
- stonework
- timber or metal lathing

Cleaning of surfaces may involve:

- wire brushing
- grinding
- chipping
- washing down

Dash coat may be applied using:

- trowel
- brush
- nozzle spray

Personal protective equipment may include:

- boots
- safety glasses/goggles
- ear plugs/muffs
- dust masks/respirators
- gloves
- cap

Tools and equipment may include but are not limited to:

- measuring tape/rule
- trowels
- brushes
- screed boards
- scaffolding
- straight edges
- grinder
- concrete mixer
- mortar boards and stands
- shovel
- wheelbarrows
- hawks
- joint rules
- small tools
- plumb bob
- masons square
- buckets
- sieve
- power leads

Reporting of faults should be in accordance with company's workplace procedures and may b e verbal or written.

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EVIDENCE GUIDE

Competency is to be demonstrated by applying solid render to either brick, block or concrete background surfaces.

(1) Critical Aspects of Evidence

It is essential that competence be observed in the following aspect s:

- demonstrate compliance with Occupational Health and Safety regulations applicable to workplace and solid plastering operations
- display compliance with organisational policies and procedures
- select and use appropriate processes, tools and equipment
- apply organisational quality procedures and processes within context of applying solid plastering
- locate surfaces and inspect for bonding requirements prior to application of splash coat or render or set coat
- prepare render mix to architect's specification and
- finish reveals and returns square to surface
- employ safe and efficient techniques in the use of tools and equipment
- identify faults and problems that occur and necessary action taken to rectify
- finish surface plumb/level to tolerance of +/ -2mm over 2.4 m etres
- interactively communicate with others to ensure safe and effective work procedures

(2) Pre-requisite Relationship of Units

- BCGCOR0051A Use hand and power tools
- BCGCOR0081A Use simple levelling devices
- BCGCOR0212A Prepare surfaces
- BCGCOR0242A Carry out levelling

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(3) Underpinning Knowledge and Skills

Knowledge
Knowledge of:

- workplace and equipment safety requirements
- drawings and specifications
- mix composition
- render and rough cast
- additives including plasticisers, colour and waterproofing agents
- Building Code of Jamaica and relevant Standard
- materials
- tools and equipment
- calculation of material quantities

Skills
The ability to:

- work safely
- select and handle material safely
- organise work
- interpret drawings and specifications
- interpret documentation from a wide range of sources
- set out work
- use tools and equipment
- communicate effectively

(4) Resource Implications

The following resources should be provided:

- workplace location
- tools, plant and equipment suitable for applying cement rendering coats to flat surface
- scaffolding
- appropriate materials

(5) Method of Assessment

Competency should be assessed through direct observation of the application process and questions related to underpinning knowledge.

Assessment should be conducted while tasks are undertaken either individually or as part of a team under limited supervision.

(6) Context of Assessment

Competency may be assessed in the workplace or simulated workplace setting.

Assessment should be while tasks are undertaken either individually or as part of a team under limited supervision.

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CRITICAL EMPLOYABILITY SKILLS

Three levels of performance denote level of competency required to perform a task. These levels do not relate to the NCTVET Qualification Framework. They relate to the seven areas of generic competency that underpin effective workplace practices.

Levels of Competency		
Level 1.	Level 2.	Level 3.
• Carries out established processes • Makes judgement of quality using given criteria	• Manages process • Selects the criteria for the evaluation process	• Establishes principles and procedures • Evaluates and reshapes process • Establishes criteria for evaluation

Collect, analyse and organise information	Level 2	
Communicate ideas and information	Level 2	
Plan and organise activities	Level 2	
Work with others and in team	Level 1	
Use mathematical ideas and techniques	Level 2	
Solve problems	Level 2	
Use technology	Level 2	

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BCGMAS1462A: Construct straight masonry block-work

Competency Descriptor: This unit deals with the skills and knowledge required to prepare and construct concrete block masonry work, and applies to individuals working in masonry trades in the construction industry.

Competency Field: General Construction

ELEMENT OF COMPETENCY		PERFORMANCE CRITERIA	
1	Plan and prepare work	1.1	Quality Assurance requirements of company's construction operations recognised and adhered to.
		1.2	Occupational Health and Safety (OH&S) requirements for workplace environment and constructing masonry block-work identified and adhered to.
		1.3	Material and quantity requirements determined from job drawings and specifications.
		1.4	All work to comply with relevant Building Code for Masonry.
		1.5	Appropriate personal protective equipment selected, correctly fitted and used.
		1.6	Tools and equipment selected consistent with the requirements of constructing concrete masonry block-work, checked for serviceability and any faults reported to supervisor.
		1.7	Safe working area established and isolated, where applicable.
2	Set out block-work	2.1	Location and structural details of block-work determined from job drawings and specifications.
		2.2	Block-work set out to location to dimensions from job drawings and specifications.
3	Construct masonry block-work	3.1	Concrete blocks laid using mortar to job specifications and the relevant Building Codes for building block-work.
		3.2	First course of block-work laid to set out line and level.

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		3.3	Door and window openings located in block -work according to job specifications.
		3.4	Remaining courses of block-work laid straight and plumb to job specifications
4	Place reinforcement and concrete	4.1	Horizontal reinforcing steel-bars placed according to job specifications.
		4.2	Vertical reinforcing steel-bars placed according to job specifications with jointing/splicing made to engineer's specifications.
		4.3	Concrete mixed to specifications, placed and compacted in hollow block-work in line according to specifications.
		4.4	Openings constructed and lintels formed.
		4.5	Walls are straight and true in plumb, line and level within tolerances set out.
		4.6	Vents, expansion joints and weep-holes installed, where required, to job specifications.
		4.7	Perpendicular joints are laid to vertical line.
		4.8	Scaffolding erected as required in accordance with job requirements and OH&S regulations.
		4.9	Block-work raked/ruled/struck to job specifications.
5	Install belt beam/lintel	5.1	Details of belt beam and reinforcement identified in accordance with job design and specifications.
		5.2	False work constructed to job requirements to support lintel formwork over opening.
		5.3	Mortar fins of bond blocks where used removed carefully to manufacturer's requirements.
		5.4	Reinforcement placed into belt beam/formwork formwork and supported, providing correct cover in accordance with job specifications.

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		5.5	Belt beam formwork checked for placement and alignment in accordance with job drawings and engineer's specifications.
		5.6	Concrete mixed, placed into belt beam/lintel formwork and consolidated to engineer's specifications.
6	Clean up	6.1	Block-work face cleaned free of unwanted mortar and concrete.
		6.2	Formwork for belt beam safely removed when the design strength of concrete has been achieved.
		6.3	Supports within openings removed safely once the lintel design strength has been achieved.
		6.4	Area cleared and waste material disposed of safely.
		6.5	Tools and equipment cleaned, maintained and stored.

RANGE STATEMENT

This unit covers all hollow block masonry units manufactured of lightweight materials or concrete, which incorporate infilling of hollows to provide bonding strength to construction.

Reinforcement of structure can be either or both vertical or horizontal reinforcing.

This unit covers all straight, square and plumb block - work construction, which includes:

- walls
- columns
- attached piers
- belt beams and lintel
- incorporation of wall ties and reinforcement

Quality Assurance requirements may include:

- workplace operations and procedures
- quality of materials
- control of handling procedures
- use and maintenance of equipment
- attention to work specifications
- shape and quality of masonry blocks
- specification of mortar mix
- specified joint finish

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OH&S requirements to be in accordance with Statutory Legislation and regulations and may include:

- workplace environment and safety
- protective clothing and equipment
- use of tools and equipment
- handling of materials
- working platforms and scaffolding
- safety hazards

Personal protective equipment may include:

- safety goggles/glasses
- boots
- gloves
- dust masks/respirators
- hard hat
- overalls

Tools and equipment may include but are not limited to:

- measuring tape/rule
- hammers
- spirit level
- dumpy level
- concrete mixer
- wheelbarrows
- shovels
- masonry saw
- angle grinder
- trowels
- straight edges
- plumb rule
- jointing tools
- string line
- line pins
- line blocks
- scaffolding
- mortar boards
- buckets
- mason's square
- adjustable steel props
- timber beam bearers
- hand saw
- claw hammer

Reporting of faults should be in accordance with company's workplace procedures and may be verbal or written.

EVIDENCE GUIDE

Competency is to be demonstrated by the construction of a straight masonry block -work wall, including return corners and belt beam or lintel.

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(1) Critical Aspects of Evidence

Competence is to be observed in the following critical aspects:

- demonstrate compliance with Occupational Health and Safety regulations applicable to worksite and masonry block laying operations
- select and use appropriate processes, tools and equipment for masonry block laying
- apply organisational quality procedures and process within context of masonry block construction
- set out wall to the requirements of job drawings
- select blocks and mortar consistent within specifications for job
- erect scaffolding in accordance with OH&S regulations
- identify typical faults and problems that occur and necessary action taken to rectify
- interactively communicate with others to ensure safe and effective work procedures
- complete construction of masonry block-work wall to job drawings and specifications
- placement of reinforcement

(2) Pre-requisite Relationship of Units

- BCGCOR0031A Draw and interpret simple drawings
- BCGCOR0071A Erect and dismantle restricted height scaffolding
- BCGCOR0081A Use simple levelling devices
- BCGMAS0101A Carry out concrete work to simple forms
- BCGMAS0151A Prepare for construction process (brick/block-Laying)
- BCGCOR0242A Carry out levelling

(3) Underpinning Knowledge and Skills

Knowledge
Knowledge of:

- workplace and equipment safety requirements including regulations, codes and standards'
- block expansion
- control and articulation joints
- mortar mix composition
- range of mortar additives including plasticisers and their application
- Building Code and Standard for Masonry Work
- materials for constructing masonry block-work walls
- tools and equipment suitable for masonry block-work construction
- measuring and levelling

Skills
The ability to:

- work safely
- read and interpret drawings
- interpret documentation from a wide range of sources
- use tools and equipment
- set out work
- communicate effectively
- organise work
- lay masonry block-work
- erect restricted height scaffolding

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(4) Resource Implications

The following resources should be provided:

- workplace location
- tools, plant and equipment appropriate for constructing masonry block -work walls
- scaffolding
- materials appropriate for masonry block -work construction
- drawings and specification relevant to tasks
- appropriate size belt beam lintel reinforcement cage

(5) Method of Assessment

Competency should be assessed through direct observation of practical application and questions related to underpinning knowledge.

Competency should be assessed under general guidance checking at various stages of the process and at completion of the activity against performance criteria and specifications.

(6) Context of Assessment

Competency may be assessed in the workplace or simulated workplace setting.

Assessment should be conducted while tasks are undertaken either individually or as part of a team under limited supervision.

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CRITICAL EMPLOYABILITY SKILLS

Three levels of performance denote level of competency required to perform a task. These levels do not relate to the NCTVET Qualifications Framework. They relate to the seven areas of generic competency that underpin effective workplace practices.

Levels of Competency		
Level 1.	Level 2.	Level 3.
• Carries out established processes • Makes judgement of quality using given criteria	• Manages process • Selects the criteria for the evaluation process	• Establishes principles and procedures • Evaluates and reshapes process • Establishes criteria for evaluation

Collect, analyse and organise information	Level 2	
Communicate ideas and information	Level 2	
Plan and organise activities	Level 2	
Work with others and in team	Level 2	
Use mathematical ideas and techniques	Level 2	
Solve problems	Level 2	
Use technology	Level 2	

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BSBSBM0012A: Craft personal entrepreneurial strategy

Competency Descriptor: This unit deals with the skills and knowledge required to craft an entrepreneurial strategy that fits with the attitudes, behaviours, management competencies and experience necessary for entrepreneurs to meet the requirements and demands of a specific opportunity.

Competency Field: Small Business Operations

ELEMENT OF COMPETENCY	PERFORMANCE CRITERIA
1. Demonstrate knowledge of the nature of entrepreneurship	1.1 Concepts associated with entrepreneurship are clearly defined.
	1.2 Factors which influence entrepreneurship in and outside of Jamaica are correctly identified and explained.
	1.3 The importance of entrepreneurship to economic development and employment is explained clearly.
	1.4 The findings of research conducted on entrepreneurial ventures and successes in the Caribbean region are clearly presented in an appropriate format.
	1.5 Differences between wage employment and entrepreneurial ventures are correctly stated.
2. Identify and assess entrepreneurial characteristics	2.1 Relevant research is carried out and required entrepreneurial characteristics identified.
	2.2 Entrepreneurial characteristics identified are assessed and ranked.
	2.3 An understanding of the process and discipline that enable an individual to evaluate and shape choices and to initiate effective action is correctly demonstrated.
	2.4 Factors that will help an entrepreneur to manage the risk and uncertainties of the future, while maintaining a future orientated frame of mind, are identified.

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3.	Develop self-assessment profile	3.1	Self-assessment tools/methods to identify personal entrepreneurial potential are identified and properly used.
		3.2	The ability to apply creativity, problem-solving techniques and principles to solve business related problems are demonstrated.
		3.3	Feedback from others for the purpose of becoming aware of blind spots and for reinforcing or changing existing perceptions of strengths/ weaknesses is appropriately obtained.
4.	Craft an entrepreneurial strategy	4.1	A profile of the past that includes accomplishments and preferences in terms of life and work styles, coupled with a look into the future and an identification of what one would like to do is developed.
		4.2	Commitment, determination and perseverance; orientation towards goals; taking initiative and accepting personal responsibility; recognizing management competencies and identifying areas for development are determined.
		4.3	Written guidelines to obtain feedback that is solicited, honest, straightforward, and helpful but not all positive or negative are developed to facilitate reviews.
		4.4	Framework and process for setting goals which demand time, self-discipline, commitment, dedication and practice are developed.
		4.5	Goals established are specific and concrete, measurable, relate to time, realistic and attainable.
		4.6	Priorities, including identifying conflicts and trade-offs and how these may be resolved are established.
		4.7	Potential problems, obstacles and risks in meeting goals are identified.
		4.8	Specified action steps that are to be performed in order to accomplish goals are identified.
		4.9	The method by which results will be measured is indicated.

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4.10 Milestones for reviewing progress and tying these to specific dates on a calendar are established.

4.11 Sources of help to obtain resources are identified.

4.12 Evidence of the ability to review process and periodically revise goals is demonstrated.

RANGE STATEMENT

At this stage of the entrepreneurial process the entrepreneur must be able to conduct a self-assessment profile, examine the frame work for self assessment, develop a personal entrepreneurial strategy, identify data to be collected in the self-assessment process and learn about receiving feedback and setting goals.

Concepts associated to include:

- risk
- entrepreneurship
- macro-screening
- micro-screening
- competition
- wage employment

Influencing factors to include:

- market conditions
- markets – demand/supply
- global trends
- level of economic activities
- funding
- economic stability
- social stability
- resources availability

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The entrepreneur must be able to:

- understand the extreme complexity in predicting or aligning him/herself to specific careers in an environment of constant change
- determine the kind of entrepreneur he or she wants to become based on attitudes, behaviours, competencies, experience and how these fit with the requirements and demands for a specific opportunity
- evaluate thoroughly his or her attraction to entrepreneurship
- effectively develop personal plan
- utilize available information that will enhance his or her ability to achieve success

The entrepreneur may encounter setbacks if the planning process is not effectively pursued.

Pitfalls may include:

- proceeding without effective planning which may result in commitment to uncertainty
- commitment to a premature path with the desirability of flexibility can lead to disaster
- personal plans fail for the same reasons as business plans including frustration if the plan appears not to be working immediately and the challenges of changing behaviour from an activity-oriented routine to one that is goal oriented
- developing plans that fail to anticipate obstacles, and those that lack progress milestones and reviews

EVIDENCE GUIDE

Competency is to be demonstrated when the entrepreneur is able to undertake a personal entrepreneurial assessment exercise to determine if he or she possesses the necessary credentials to be a successful entrepreneur. This stage of the entrepreneurial process is critical since experience has shown that the founder is one of the deciding forces if the venture is to succeed and prosper.

(1) Critical Aspects of Evidence

The entrepreneur will be assessed by his/her action in developing an orchestrated plan in order to effectively pursue the business concept.

(2) Pre-requisite Relationship of Units

- Nil

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(3) Underpinning Knowledge and Skills

Knowledge
Knowledge of:

- personal entrepreneurial profile systems
- effective management systems: marketing, operations/productions, finance, administration, law
- how to measure feedback
- the method of developing a personal plan
  and a business plan
- understanding the difference between entrepreneurial culture and management culture

Skills
The ability to:

- determine barriers to entrepreneurship
- minimize exposure to risk
- exploit any available resource pool
- tailor reward systems to meet a particular situation
- effectively plan and execute activities
- use computer technology to undertake assessments

(4) Resource Implications

The following resources should be made available:

Personal computer with access to the internet and appropriate software that will enable one to conduct the necessary analysis using the internet

(5) Method of Assessment

A useful method of assessment is to determine if the venture can stand up to the test of critical evaluation.

(6) Context of Assessment

This stage of the entrepreneurial process is assessed when comparisons are made between actual outcomes and plans/projections.

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CRITICAL EMPLOYABILITY SKILLS

Three levels of performance denote level of competency required to perform a task. These levels do not relate to the NCTVET Qualifications Framework. They relate to the seven areas of generic competency that underpin effective workplace practices.

Levels of Competency		
Level 1	Level 2	Level 3
• Carries out established processes • Makes judgement of quality using given criteria	• Manages process • Selects the criteria for the evaluation process	• Establishes principles and procedures • Evaluates and reshapes process • Establishes criteria for evaluation

Collect, analyse and organise information	Level 1	
Communicate ideas and information	Level 1	
Plan and organise activities	Level 1	
Work with others and in team	Level 1	
Use mathematical ideas and techniques	Level 1	
Solve problems	Level 1	
Use technology	Level 1	

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BCGCAR0673A: Erect/dismantle jump type formwork

Competency Descriptor: This unit deals with the skills and knowledge required to prepare, erect and strip jump type formwork, and applies to individuals working in concreting in the construction industry.

Competency Field: General Construction

ELEMENT OF COMPETENCY	PERFORMANCE CRITERIA	
1. Plan and prepare work	1.1	Quality Assurance requirements for company's construction operations recognised and adhered to.
	1.2	OH&S requirements for application tasks and workplace environment recognised and adhered to.
	1.3	Design of formwork structure identified from site and engineering detailed drawings.
	1.4	Appropriate personal protective equipment selected, correctly fitted and used.
	1.5	Tools and equipment selected to carry out processes consistent with job requirements, checked for serviceability and any faults reported to supervisor.
2. Set out	2.1	Set out points and lines located according to engineer's drawings, survey datum points and site plan.
	2.2	Formwork positioning located to predetermine set out.
3. Assemble core form system	3.1	Internal pre-fabricated system wall form shutters erected and fixed into locations to engineer's drawings.
	3.2	Concrete nib walls poured to heights consistent with engineer's requirements.
	3.3	Erected shutters fitted to nib walls.
	3.4	Shear key feet installed to manufacturer's specifications.
	3.5	Platforms and assembly fitted into core to manufacturer’s specifications.
	3.6	Structural steel systems grid-work and hydraulic hose lines fitted to manufacturer's specifications.
	3.7	Wall form shutters suspended and system cladding and platforms fitted and completed to manufacturer’s specifications and engineer's requirements.

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		3.8	Temporary lighting and emergency electrical work carried out according to specifications and authority requirements.
4.	Locate and install penetrations	4.1	Locations and dimensions of penetrations set out in line with designated tolerance from engineering drawings.
		4.2	Penetration, block outs constructed where required to engineering drawings.
		4.3	Penetrations installed to requirements of engineering drawings.
5.	Install reinforcement	5.1	Reinforcement bars and/or mesh installed and fixed to conform to engineer's specifications.
6.	Close shutters	6.1	External prefabricated system wall shutters erected and fixed into location according to engineer's and manufacturer's specification.
7.	Place concrete	7.1	Concrete placed and consolidated within the system wall form shutters to engineer's requirements.
		7.2	Concrete cured to engineer's specification.
8.	Strip shutters	8.1	Shutters loosened and stripped according to manufacturer's requirements.
9.	Jump system	9.1	Formwork system electrically/hydraulically jacked into new position according to engineering drawing and manufacturer's specifications.
		9.2	Trailing platforms installed to engineer's specifications.
		9.3	Stairs and access ways installed according to drawings and engineer's specifications.
10.	Dismantle system	10.1	System dismantled in accordance with manufacturer's and engineer's specifications.
		10.2	Safe working area maintained to OH&S regulations.
11.	Clean-up	11.1	Waste materials removed and placed into job waste bins or rubbish stockpiles.
		11.2	System components cleaned, maintained to manufacturer's specified condition and stored.
		11.3	Tools and equipment cleaned, maintained and stored.

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RANGE STATEMENT

This unit applies to systemised formwork constructed and operated to engineer's specifications for jump formwork.

Quality Assurance requirements may include:

- workplace operations and procedures
- quality of materials
- control of handling procedures
- use and maintenance of equipment
- attention to specifications of work

Applications of jump formwork include:

- cores
- walls
- silos

OH&S requirements to be in accordance with Statutory Legislation and Regulations and may include:

- workplace environment and safety
- protective clothing and equipment
- use of tools and equipment
- handling of materials
- working platforms and scaffolding
- working with hydraulic equipment

Personal protective equipment may include:

- boots
- safety glasses/goggles
- ear plugs/muffs
- dust masks/respirators
- gloves
- hard hat
- overhall

Tools and equipment may include but are not limited to:

- measuring tape/rule
- hammer
- spirit level
- nail bag
- levelling equipment
- chisels
- hand saws
- saw stools
- power saws
- power drills
- air compressor and hoses
- power leads
- spanners
- pneumatic wrenches

Formwork is to be in accordance with Regulation for Formwork for Concrete.

Reporting of faults should be in accordance with worksite operational procedures and may be verbal or written.

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EVIDENCE GUIDE

Competency is to be demonstrated by the performance of working with a team to carry out the safe and effective erecting/dismantling of jump form formwork to engineer's design and industry standards on a designed project.

(1) Critical Aspects of Evidence

It is essential that competence is observed in the following aspects:

- demonstrate compliance with Occupational Health and Safety regulations applicable to workplace operations
- show compliance with organisational policies and procedures
- select and use of appropriate processes, tools and equipment
- apply organisational quality procedures and processes within the context of erecting and operating jump formwork to form concrete
- give attention to accurate setting out for location of formwork
- adopt and use safe and effective procedures in the assembling of shutters
- give attention to specification details in erecting formwork and structural steel support
- apply correct procedures in connecting hydraulic hose lines
- give attention to assembling and installing all platforms, walkways and stairs supporting formwork operation.
- apply correct procedures in setting up block-outs and placing reinforcement to specifications
- give appropriate attention in team operation to the processes of pouring concrete and jumping formwork to next location.
- identify faults and problems that occur and necessary action taken to rectify
- interactively communicate with others to ensure safe and effective worksite operations

(2) Pre-requisite Relationship of Units

- BCGCOR0051A Use hand and power tools
- BCGCOR0061A Use small plant and equipment
- BCGCOR0242A Carry out levelling
- BCGCAR0662A Erect and dismantle formwork

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(3) Underpinning Knowledge and Skills

Knowledge
Knowledge of:

- workplace and equipment safety requirements including relevant statutory regulations, codes and standards
- systemised formwork construction
- jump formwork design
- understanding of hydraulic pressure on formwork by concrete when placed
- safe handling and storage of chemicals and flammable liquids
- formwork for concrete
- materials and components
- company's quality system and the role of the individual within that system
- understanding of electrical/hydraulic jacking systems
- plant, tools and equipment
- reinforcement in concrete
- worksite communication

Skills
The ability to:

- work safely
- interpret drawings, specifications and documentation
- organise work
- use tools plant and equipment
- select and identify materials relative to task
- handle materials
- fit and secure materials
- measure accurately
- communicate effectively

(4) Resource Implications

The following resources should be provided:

- worksite location developed to base slab
- materials and components appropriate to proposed activity
- tools, plant and equipment appropriate to construction and installation processes
- appropriate communication of documentation relevant to the activity and tasks

(5) Method of Assessment

Competency in this unit may be determined concurrently based upon integrated project work.

Competency should be assessed through direct observation of application to tasks and questions related to underpinning knowledge.

Competency should be assessed under general guidance checking at various stages of the processes and at the completion of each activity against the performance criteria and specifications.

(6) Context of Assessment

Competency should be assessed in the workplace or simulated workplace setting.

Assessment should be while tasks are undertaken either individually or as part of a team under limited supervision.

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CRITICAL EMPLOYABILITY SKILLS

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Levels of Competency		
Level 1.	Level 2.	Level 3.
• Carries out established processes • Makes judgement of quality using given criteria	• Manages process • Selects the criteria for the evaluation process	• Establishes principles and procedures • Evaluates and reshapes process • Establishes criteria for evaluation

Collect, analyse and organise information	Level 2	
Communicate ideas and information	Level 1	
Plan and organise activities	Level 2	
Work with others and in team	Level 2	
Use mathematical ideas and techniques	Level 3	
Solve problems	Level 2	
Use technology	Level 2	

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BCGMAS0903A: Transport concrete

Competency Descriptor: This unit deals with the skills and knowledge required to transport concrete to pour locations, and applies to individuals working in the coordination of concrete work in the construction industry.

Competency Field: General Construction

ELEMENT OF COMPETENCY	PERFORMANCE CRITERIA
1. Plan and prepare work	1.1 Quality Assurance requirements of company's concreting operations recognised and adhered to.
	1.2 OH&S requirements for workplace environment and handling and placing concrete and workplace environment recognised and adhered to.
	1.3 Method of transporting identified in accordance with job requirements and Quality Assurance procedures.
	1.4 Appropriate personal protective equipment selected, correctly fitted and used.
	1.5 Concrete transportation equipment selected consistent with job requirements, checked for serviceability and any faults reported to supervisor.
	1.6 Concrete pour sequence and starting point identified consistent with site layout, access and transport system.
2. Take delivery of concrete	2.1 Delivery advice checked for accuracy to ordered material.
	2.2 Concrete delivery vehicle directed to location of discharge.
3. Discharge concrete and take tests and samples	3.1 Concrete discharged via chute into wheelbarrow, kibble, pump or hopper.
	3.2 Slump tests and samples taken in accordance with specifications, Quality Assurance requirements and the National Building Codes.
4. Transport concrete	4.1 Discharged concrete transported to location via wheelbarrow, crane kibble or concrete boom/line pump.
	4.2 Concrete transported and monitored, minimising spillage.
5. Clean-up	5.1 Area cleared of waste and equipment.
	5.2 Waste concrete removed and placed into job waste bins or rubbish stockpile.
	5.3 Tools and equipment cleaned, maintained and stored.

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RANGE STATEMENT

This unit covers the transportation of concrete from the delivery vehicle to the pour location on site.

Methods of transportation may include:

- wheelbarrow
- kibble
- dumper
- chute
- pumping
- concrete placing boom

Personal protective equipment may include:

- safety goggles/glasses
- boots
- gloves
- respirators/dust masks
- jackets

Delivery advice should reflect quantity and mix specification.

OH&S requirements to be in accordance with statutory legislation and regulations and may include:

- protective clothing and equipment
- workplace environment and safety
- working platforms
- working from scaffolding
- safety hazards
- use of plant and equipment

Quality Assurance requirements may include:

- specifications for mix
- method of transporting concrete
- control of handling and spillage
- placing control
- use and maintenance of equipment

Slump tests and samples of concrete to be carried out in accordance with:

- Building Standards - Methods of Testing Concrete
- Building Standards - Sampling of Fresh Concrete

Reporting of faults should be carried out in accordance with organisations' workplace procedures and may be verbal or written.

EVIDENCE GUIDE

Competency is to be demonstrated by the transportation of concrete on site using at least two separate methods of those listed in the range of variables.

(1) Critical Aspects of Evidence

It is essential that competence be observed in the following aspects:

- demonstrate compliance with Occupational Health and Safety regulations applicable to worksite operations
- indicate compliance with organisational quality policies and procedures within the context of handling and placing of concrete
- select and use appropriate processes, tools and equipment
- inspect pour location and delivery site to ensure most effective and safe route for transportation method
- communicate to confirm information on delivery docket, conforms with ordered concrete: strength, slump and volume
- discharge concrete to transport equipment without segregation
- interactively communicate with other personnel to ensure safe and effective transport of concrete to location

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(2) Pre-requisite Relationship of Units

Pre-requisites for this unit are:

- BCGCOR0061A Use plant and equipment
- BCGMAS0101A Carry out concrete work to simple forms
- BCGMAS0292A Carry out concrete work

This competency may be assessed concurrently with:

- BCGMAS0913A Place concrete

(3) Underpinning Knowledge and Skills

Knowledge
Knowledge of:

- workplace and equipment safety requirements including relevant statutory regulations, codes and standards
- concrete mix specifications
- cause and effect of concrete segregation
- factors effecting setting time of concrete
- concrete slump ranges for pumping of concrete
- effect of additional water on water cement ratio and design strength
- delivery documentation
- plant and equipment

Skills
The ability to:

- work safely
- interpret documentation from a wide range of sources
- use tools and equipment
- organise work
- communicate effectively

(4) Resource Implications

The following resources should be provided:

- site location for concrete pour
- tools, plant and equipment appropriate to transportation process
- documentation on concrete material applicable to pour

(5) Method of Assessment

Competency should be assessed through direct observation of application to tasks and questions related to underpinning knowledge.

Competency should be assessed under general guidance checking at various stages of the process and at completion of the activity against performance criteria and specifications.

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(6) Context of Assessment

Competency should be assessed in the workplace or simulated workplace setting.

Assessment should be while tasks are undertaken either individually or as part of a team under limited supervision.

CRITICAL EMPLOYABILITY SKILLS

Three levels of performance denote level of competency required to perform a task. These levels do not relate to the NCTVET Qualifications Framework. They relate to the seven areas of generic competency that underpin effective workplace practices.

Levels of Competency		
Level 1.	Level 2.	Level 3.
Carries out established processes Makes judgement of quality using given criteria	Manage process Select the criteria for the evaluation process	Establishes principles and procedures Evaluates and reshapes process Establishes criteria for evaluation

Collect, analyse and organise information	Level 2	To measure self-performance
Communicate ideas and information	Level 2	With members of the work team
Plan and organise activities	Level 1	For self
Work with others and in team	Level 2	In completing scheduled tasks
Use mathematical ideas and techniques	Level 2	As an aid to measure and schedule tasks
Solve problems	Level 2	As an aid to self-development
Use technology	Level 1	To manage scheduling and completion of tasks

Please refer to the Assessment Guidelines for advice on how to use the Critical Employability Skills.

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BCGSTW0933A: Apply reinforcement schedule

Competency Descriptor: This unit deals with the skill and knowledge required to interpret and apply reinforcement schedule for a range of construction projects, and applies to individuals working in steel-fixing/masonry trades in the construction industry.

Competency Field: General Construction

ELEMENT OF COMPETENCY	PERFORMANCE CRITERIA
1. Plan and prepare for concrete construction	1.1 Quality Assurance requirements of company's concreting operations recognised and adhered to.
	1.2 OH&S requirements for workplace environment and handling of reinforcement recognised and adhered to.
	1.3 Reinforced concrete construction schedule identified from project schedule.
	1.4 Elements of structure identified from project construction schedule and job drawings.
	1.5 Job drawings checked for date of production and probability of being latest amendment.
	1.6 Reinforcement schedule and delivery documentation obtained from supervisor/supplier.
	1.7 Location of stored, delivered reinforcement identified and/or delivered reinforcement checked against delivery docket to ensure at directed project.
	1.8 Scheduler contact identified for any queries or discrepancies.
2. Read and interpret schedule	2.1 Structural element to be constructed identified from site and structural detail drawings.
	2.2 Type and features of reinforcement and number of pieces/sheets identified from structural detail drawings.
	2.3 Reinforcement schedule read to identify appropriate reinforcement for structural element.
	2.4 Reinforcement schedule read to identify coding/number related to labels on reinforcement bundles.

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		2.5	Appropriate reinforcement bundle located in accordance with like relationship between schedule and label/s coding and numbering.
		2.6	Non-identification of similar coding and numbering reported and contact made with schedule contact for clarification.
		2.7	Where coding/numbering not related to coding/numbering of available on-site drawings, marked drawings obtained from supplier/scheduler.
3.	Check contents of identified bundle/s	3.1	Content of bundle/s checked for conformity to schedule and proposed element.
		3.2	Number of pieces or sheets determined.
		3.3	Where discrepancies in quantities, determine whether: • shortfall is somewhere else • excess is for similar elements • excess does not relate • it is an inappropriate bundle
		3.4	Cranked or bent items of reinforcement or lengths and sizes checked for conformity to structural detail drawings.
		3.5	Where discrepancies in shape, length or sizes, determine whether wrong bundle has been selected or contact supplier/scheduler for clarification.
		3.6	Where contents conform to schedule and element's requirements, mark schedule accordingly.
4.	Locate reinforcement for element construction	4.1	Identified reinforcement marked or placed and noted, ready for transportation to element location.
		4.2	Reinforcement directed to structural location for placement and fixing.

RANGE STATEMENT

This unit applies to the practical application of relating to reinforcement schedule to a construction process and identifying and selecting the appropriate reinforcement.

Coding and numbering of reinforcement bundles can vary between different suppliers who use their own identification system.

Tags on bundles do not relate all similar details to those listed in the Reinforcement Schedule.

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Structural elements include:

- footings
- slabs
- columns
- beams
- walls
- block work

Identification characteristics about reinforcement include:

- location for material
- size of bar
- shape of formed bars
- size of mesh
- type of steel bar
- cranks and bends
- number of bars in a bundle
- length of material
- grade of steel reinforcing – surface markings

Steel reinforcement for concrete construction to be in accordance with:

- concrete structures
- steel reinforcing bars for concrete

Quality Assurance requirements may include:

- workplace operations and procedures
- quality of materials
- control of handling procedures
- attention to specifications of work placement of reinforcement

OH&S requirements to be in accordance with Statutory Legislation and Regulations and may include:

- workplace environment and safety
- protective clothing and equipment
- use of tools and equipment
- handling of materials

Reinforcement:

- mild steel bars
- mesh or fabric reinforcement

EVIDENCE GUIDE

Competence is to be demonstrated by reading and interpreting a reinforcement schedule to identify and select the required reinforcement for at least two of the separate types of structural elements listed within the range of variables statement.

(1) Critical Aspects of Evidence

It is essential that competence be observed in the following aspects:

- demonstrate compliance with occupational health and safety regulations applicable to workplace operations
- apply organisational quality procedures and processes within the context of constructing reinforced concrete
- identify coding and numbering related to a reinforcement schedule
- identify structural details of reinforced concrete elements
- use safe and effective procedures to handle materials
- identify relevant drawings and specifications
- interactively communicate with others to ensure effective operations

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(2) Pre-requisite Relationship of Units

Pre-requisites for this unit are:

- BCGCOR0031A Read and interpret plans
- BCGSTW0262A Carry out steel fixing
- BCGMAS0292A Carry out concrete work

(3) Underpinning Knowledge and Skills

Knowledge
Knowledge of:

- relevant Statutory OH&S Legislation, standards and codes of practice
- workplace and equipment safety requirements
- reinforcement schedules
- identification of coding system
- mild steel reinforcement
- mesh or fabric reinforcement
- reinforcing characteristics
- site drawings and specifications
- reinforced concrete structure
- Building Standards on reinforcement

Skills
The ability to:

- work safely
- interpret drawings and documentation
- organise work
- calculate material quantities
- fix reinforcing
- communicate effectively

(4) Resource Implications

The following resources should be provided:

- workplace location
- materials appropriate to application activity
- appropriate documentation related to tasks

(5) Method of Assessment

Competency shall be assessed while tasks are undertaken.

Assessment may involve:

- observation of the application process
- questioning related to underpinning knowledge

Assessment may be by intermittent checking at various stages of each task application or at the completion of each task in accordance with the performance criteria.

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(6) Context of Assessment

Competency should be assessed in the normal or simulated workplace setting.

Assessment should be while tasks are being done under limited supervision.

CRITICAL EMPLOYABILITY SKILLS

Three levels of performance denote level of competency required to perform a task. These levels do not relate to the NCTVET Qualification Framework. They relate to the seven areas of generic competency that underpin effective workplace practices.

Levels of Competency		
Level 1	Level 2	Level 3
• Carries out established processes • Makes judgement of quality using given criteria	• Manages process • Selects the criteria for the evaluation process	• Establishes principles and procedures • Evaluates and reshapes process • Establishes criteria for evaluation

Collect, analyse and organise information	Level 3	
Communicate ideas and information	Level 2	
Plan and organise activities	Level 2	
Work with others and in team	Level 1	
Use mathematical ideas and techniques	Level 2	
Solve problems	Level 2	
Use technology	Level -	

Please refer to the Assessment Guidelines for advice on how to use the Critical Employability Skills.

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BCGMAS0943A: Carry out special finishes to concrete

Competency Descriptor: This unit deals with the skills and knowledge required to carry out special finishes to concrete surface, and applies to individuals working in masonry trades in the construction industry.

Competency Field: General Construction

ELEMENT OF COMPETENCY	PERFORMANCE CRITERIA	
1. Plan and prepare work	1.1	Quality Assurance requirements of company's concreting operations recognised and adhered to.
	1.2	OH&S requirements for application to tasks and workplace environment, recognised and adhered to.
	1.3	Job material and equipment requirements determined from drawings and specifications.
	1.4	Safety and protection requirements determined for work personnel, public and environment.
	1.5	Appropriate personal protective equipment selected, correctly fitted and used.
	1.6	Tools and equipment selected to carry out processes consistent with job requirements and checked for serviceability.
2. Carry out false brickwork finish	2.1	Concrete poured, compacted and screeded to specification.
	2.2	Stencil for brickwork finish prepared so that any lapping will maintain alignment and bond.
	2.3	Stencil carefully laid on screeded surface to specifications ensuring alignment, bond and flat.
	2.4	Prepare dry topping mix of colour, stone-dust and cement and sprinkle evenly over surface to specifications.
	2.5	Surface finished with wood or steel float to consistent texture in accordance with specifications.
	2.6	Critical time of lifting stencil carried out at setting time to manufacturer's recommendations.
3. Carry out slate and pattern paving	3.1	Concrete poured, compacted and screeded to specifications.
	3.2	Method of applying pattern determined in accordance with designed finish and specifications.
	3.3	Roller or stamped pattern equipment checked for cleanliness and serviceability.

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		3.4	Layout design planned and initial starting point determined to specifications and design.
		3.5	Base colour and topping dust prepared and sprinkled evenly over surface to specifications.
		3.6	Base colour floated into surface to specification.
		3.7	Random colour(s), where applicable, sprinkled onto surface at random locations to create slate type colourings.
		3.8	Release agent prepared and sprinkled evenly over whole surface to specifications.
		3.9	Roller and stamp used prior to initial set to create designed pattern and surface effect to specification.
		3.10	Construction joints cut into roller applied finish after setting, where applicable, to specification.
4.	Carry out exposed aggregate finish	4.1	River gravel aggregate incorporated in concrete mix to specification.
		4.2	Concrete poured, compacted and screeded to specifications.
		4.3	Following set of concrete, strong water jet and stiff brush applied to brush and wash fines from surface to expose aggregate.
		4.4	Exposed aggregate left clean and free to designed effect and specifications.
5.	Cure concrete	5.1	Curing application applied to concrete to specifications following set.
		5.2	Curing maintained to period in accordance with specifications.
6.	Clean up	6.1	Area cleared of waste and equipment.
		6.2	Waste and unwanted material disposed of safely.
		6.3	Tools and equipment cleaned, maintained and stored.

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RANGE STATEMENT

This unit applies to special finishes to concrete surfaces providing a distinct featured face finish.

Special finishes can be obtained on both horizontal and vertical faces, the latter being applied following the stripping of formwork shutter with textured finish provided off form.

Special finishes may include the following:

- false brickwork stencil finish
- false slate or similar patterned paving finish
- exposed aggregate finish
- other special finishes applied with a trowel using concrete as a base material
- off form textured finish
- coloured concrete

Quality Assurance requirements may include:

- workplace operations and procedures
- quality of materials
- control of handling procedures
- use and maintenance of equipment
- attention to specifications of work

OH&S requirements to be in accordance with Statutory Legislation and regulations and may include:

- workplace environment and safety
- protective clothing and equipment
- use of tools and equipment
- handling of materials
- working platforms

Personal protective equipment may include:

- safety goggles/glasses
- boots
- gloves
- respirators/dust masks
- cap or hat

Tools and equipment may include but are not limited to:

- trowels
- power trowels
- floats
- brooms
- hoses
- rollers
- stencils
- shovels
- wheelbarrows
- concrete mixers

EVIDENCE GUIDE

Competency is demonstrated by finishing concrete in at least three of the types of finishes listed within the range of variables.

(1) Critical Aspects of Evidence

It is essential that competence be observed in the following aspects:

- demonstrate compliance with Occupational Health and Safety regulations applicable to workplace operations
- indicate compliance with organisational policies and procedures
- select and use appropriate processes, tools and equipment to carry out tasks

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Critical Aspects of Evidence (Cont'd)

- apply organisational quality procedures and process within the context of finishing concrete
- accurately align stencil/roller to provide continuity of pattern
- adopt and use safe and effective procedures to spread colour
- finish concrete surface in accordance with design to specifications
- take measures to protect concrete surface from either pedestrian or vehicular traffic and weather
- identify typical faults and problems that occur and necessary action taken to rectify
- interactively communicate with others to ensure safe and effective workplace operations

(2) Pre-requisites Relationship of Units

- Nil

(3) Underpinning Knowledge and Skills

Knowledge
Knowledge of:

- workplace equipment safety requirements including relevant statutory regulations and codes
- concrete and its characteristics
- placing and finishing of concrete
- mortar mix composition
- range of mortar additives including plasticiser/s and/or application
- control and articulation of joints
- Building Standards for Concrete Structures
- concrete finishing techniques
- specifications
- tools and equipment

Skills
The ability to:

- work safely
- organise and set out work
- use tools and equipment
- select materials
- handle materials safely
- communicate effectively

(4) Resource Implications

The following resources should be provided:

- work location appropriate to process of applying special finishes to concrete
- tools and equipment appropriate to finishing processes
- construction materials appropriate to process of special finishes to concrete work
- appropriate communication of documentation relevant to task

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(5) Method of Assessment

Competency should be assessed through direct observation of application to tasks and questions related to underpinning knowledge.

Competency of this unit may be determined concurrently, based upon project work.

Competency should be assessed under general guidance, checking at various stages of the process and at the completion of the activity against performance criteria and specifications.

(6) Context of Assessment

Competency may be assessed in the workplace or simulated workplace setting.

Assessment should be while tasks are undertaken either individually or as part of a team under limited supervision.

CRITICAL EMPLOYABILITY SKILLS

Three levels of performance denote level of competency required to perform a task. These levels do not relate to the NCTVET Qualifications Framework. They relate to the seven areas of generic competency that underpin effective workplace practices.

Levels of Competency		
Level 1.	Level 2.	Level 3.
• Carries out established processes • Makes judgement of quality using given criteria	• Manages process • Selects the criteria for the evaluation process	• Establishes principles and procedures • Evaluates and reshapes process • Establishes criteria for evaluation

Collect, analyse and organise information	Level 2	
Communicate ideas and information	Level 2	
Plan and organise activities	Level 2	
Work with others and in team	Level 1	
Use mathematical ideas and techniques	Level 3	
Solve problems	Level 3	
Use technology	Level 2	

Please refer to the Assessment Guidelines for advice on how to use the Critical Employability Skills.

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BCGMAS0953A: Carry out tilt slab construction

Competency Descriptor: This unit deals with the skills and knowledge required to prepare and carry out tilt slab construction, and applies to individuals working in carpentry, steel/fixing and masonry trades in the construction industry.

Competency Descriptor: General Construction

ELEMENT OF COMPETENCY		PERFORMANCE CRITERIA	
1.	Plan and prepare work	1.1	Quality Assurance requirements of company's construction operations recognised and adhered to.
		1.2	Occupational Health & Safety (OH&S) requirements for application to tasks and workplace environment recognised and adhered to.
		1.3	Work schedule, material and equipment requirements determined from project program, drawings and specifications.
		1.4	Construction and erection planned in accordance with the specifications tilt slab concrete construction.
		1.5	Appropriate personal protective equipment selected, correctly fitted and used.
		1.6	Plant, tools and equipment selected to carry out processes consistent with job requirements and checked for serviceability.
2.	Set-out and prepare formwork for slab	2.1	Location and size of slab set out to the requirements of job drawings and specifications.
		2.2	Slab base prepared and sheeted to face level and alignment in accordance with specifications and drawings.
		2.3	Edge formwork prepared, placed and fixed to plumb and alignment to specification requirements and set out.
		2.4	Form oil/separative applied to formwork with mop/brush according to specifications.
3.	Place and tie reinforcement and cast in fittings	3.1	Reinforcement, accessories and cast-in fittings checked for conformity to design and specifications.

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		3.2	Reinforcement and accessories located in position to drawings and specifications.
		3.3	Reinforcement tied and/or welded in correct placement in accordance with drawings, specifications and the Standards for Welding of Reinforcing Steel.
4.	Place, finish and cure concrete	4.1	Where requirements concrete slump tested and samples taken for tests to check conformity to specification for concrete.
		4.2	Concrete placed evenly and consolidated using approved vibration method to specification.
		4.3	Concrete surface screeded and finished to specification ensuring cast-in fittings clear.
		4.4	Curing process of concrete applied in accordance with specification.
5.	Tilt, position and hold slabs	5.1	Edge formwork stripped carefully ensuring no damage to slab.
		5.2	Braces prepared and located ready for erection process.
		5.3	Crane and lifting equipment located in position for safe and efficient operation.
		5.4	Barricades and signage, where applicable, erected to isolate safe working area.
		5.5	Lifting points checked and lifting equipment attached to slab and connected to crane in accordance with designed lifting arrangement.
		5.6	Slab/panel raised and located safely into true position.
		5.7	Braces fitted, fixed to floor or alternative location and secured, maintaining plumb and alignment position of panel in accordance with specifications.
		5.8	Lifting equipment and crane removed and remaining formwork stripped and dismantled safely.

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6.	Clean-up	6.1 Area cleared of waste and equipment.
		6.2 Waste and unwanted material disposed of safel y.
		6.3 Serviceable and unused materials stored/stacked.
		6.4 Plant, tools and equipment cleaned, maintained and stored.

RANGE STATEMENT

This unit applies to reinforced concrete panels poured onsite alongside the position to which they are raised and located. The reinforced concrete slab/panels may be poured on concrete slab or sheet formwork.

Bracing to hold slabs/panels in vertical positions may be fixed to internal slab floor, internal columns or external anchors.

Construction and erection go verned by Building Codes - Tilt-up concrete and pre-cast concrete elements for use in buildings.

Quality Assurance requirements may include but not limited to:

- workplace operations and procedures
- quality of materials
- control of handling procedures
- use and maintenance of equipment
- attention to specifications of work
- formwork for concrete

OH&S requirements to be in accordance with Statutory Legislation and regulations and may include:

- workplace environment and safety
- protective clothing and equipment
- use of tools and equipment
- handling of materials
- working platforms

Tools and equipment may include but not limited to:

- measuring tape/rule
- hammer
- spirit level
- squares
- saw stools
- power saws
- masonry drills
- spanners
- nail gun
- air compressor and hoses
- power leads
- shovels
- rakes
- screed boards
- vibrators
- wheelbarrows

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Personal protective equipment may include:

- boots
- safety glasses/goggles
- ear plugs/muffs
- dust masks/respirators
- gloves
- hard hat

EVIDENCE GUIDE

Competence is to be demonstrated by working with a team and pouring, placing, raising and locating concrete panels on-site.

(1) Critical Aspects and Evidence

It is essential that competence be demonstrated in the critical aspects of:

- demonstrate compliance with Occupational Health and Safety regulations ap plicable to workplace operations
- indicate compliance with organisational policies and procedures
- select and use appropriate processes, tools and equipment to carry out tasks
- apply organisational quality procedures and processes within the context of tilt s lab construction
- give attention to accurate construction of formwork to specifications
- accurately place reinforcement, block outs and attachments for slab
- select and use appropriate concrete handling/transportation method
- place concrete ensuring no segrega tion and adequate compaction
- check formwork and support system periodically during pour
- screed and finish concrete to specifications
- construct and erect in accordance with Building Codes
- adopt safe and effective procedures in lifting and placement processe s
- identify typical faults and problems that occur and necessary action taken to rectify
- interactively communicate with others to ensure safe and effective workplace operations

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(2) Pre-requisite Relationship of Units

Pre-requisites for this unit are:

- BCGCOR0061A Use small plant and equipment
- BCGSTW0262A Carry out steel fixing
- BCGMAS0292A Carry out concrete work
- BCGMAS0892A Finish concrete
- BCGMAS0923A Cure concrete
- BCGMAS0912A Place concrete

This unit may be concurrently assessed with:

- BCGMAS0912A Place concrete
- BCGMAS0892A Finish concrete
- BCGMAS0923A Cure concrete

(3) Underpinning Knowledge and Skills

Knowledge
Knowledge of:

- workplace and equipment safety requirements including relevant statutory regulations and codes
- reinforced concrete construction
- methods of finishing concrete
- formwork for concrete
- factors affecting concrete bonding, curing and strength
- crane operations
- plant, tools and equipment
- measuring and levelling
- Building Standards for tilt slab construction
- basic signalling
- Quality Assurance
- worksite communications

Skills
The ability to:

- work safely
- organise work
- set out work
- use hand tools and equipment
- select and identify materials
- work to measurements and levels
- fix materials
- assist with crane operations
- communicate effectively

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(4) Resource Implications

The following resources should be provided:

- work location to carry out proposed activity
- materials appropriate to application tasks
- tools, plant and equipment appropriate to construction and erection processes
- appropriate communication of documentation relevant to proposed activity

(5) Method of Assessment

Competency in this unit may be determined concurrently based upon integrated project work.

Competency will be assessed through direct observation of application to t asks and questions related to underpinning knowledge.

Assessment may be by intermittent checking at various stages of each task application or at the completion of each activity in accordance with the performance criteria and specifications.

(6) Context of Assessment

Competency may be assessed in the workplace or simulated workplace setting.

Assessment will be while tasks are undertaken either individually or as part of a team under supervision.

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CRITICAL EMPLOYABILITY SKILLS

Three levels of performa nce denote level of competency required to perform a task. These levels do not relate to the NCTVET Qualifications Framework. They relate to the seven areas of generic competency that underpin effective workplace practices.

Levels of Competency		
Level 1.	Level 2.	Level 3.
• Carries out established processes • Makes judgement of quality using given criteria	• Manages process • Selects the criteria for the evaluation process	• Establishes principles and procedures • Evaluates and reshapes process • Establishes criteria for evaluation

Collect, analyse and organise information	Level 3	
Communicate ideas and information	Level 2	
Plan and organise activities	Level 3	
Work with others and in team	Level 2	
Use mathematical ideas and techniques	Level 3	
Solve problems	Level -	
Use technology	Level 2	

Please refer to the Assessment Guidelines for advice on how to use the Critical Employability Skills.

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BCGSTW0973A: Carry out monostrand post tensioning

Competency Descriptor: This unit deals with the skills and knowledge required to prepare and carry out mono-strand post tensioning, and applies to individuals applying stress to concrete structures in the construction industry.

Competency Field: General and Civil Construction

ELEMENT OF COMPETENCY	PERFORMANCE CRITERIA	
1. Plan and prepare work	1.1	Quality Assurance requirements of company's construction operations recognised and adhered to.
	1.2	OH&S requirements for application to tasks and workplace environment recognised and adhered to.
	1.3	Job material and equipment requirements identified from site drawings and engineer's specifications.
	1.4	Work area of stressing operation identified and located from site and engineer's drawings.
	1.5	Appropriate personal protective equipment selected, correctly fitted and used.
	1.6	Tools and equipment selected to carry out processes consistent with job requirements and checked for serviceability.
2. Mark and fix anchorages	2.1	Tendons and recess formers fixed in location according to job plans and drawings.
3. Lay and fix post tensioning cables	3.1	Required ducting laid, profiled and specified number of strands pushed through and verified according to job drawings.
	3.2	Anchorages profiled to specifications.
	3.3	Head and anchorages formed in accordance with engineer's specifications.
	3.4	Installed cables inspected in accordance with engineering's specifications.
4. Fix grout tubes	4.1	Grout tubes fixed in accordance with manufacturer's and engineer's specifications.
	4.2	Grout tubes monitored during concrete pour.

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5.	Define work area	5.1	Safe working area defined according to safe working practice and OH&S regulations.
		5.2	Barricades erected where required to isolate safe working areas.
6.	Set up for stressing and stress tendons	6.1	Recess formers removed.
		6.2	Anchor blocks and wedges set up to manufacturer's design.
		6.3	Stressing operations carried out to nominated loads specified to engineer using designed calibrated stressing equipment.
		6.4	Extensions measured and recorded on standard Quality Assurance forms for approval by engineer.
7.	Cut and seal strand and recesses	7.1	Protruding strands cut and sealed according to manufacturer's specifications.
8.	Mix and pump grout	8.1	Cement grout mixed and pumped to the requirements of engineer's specification.
9.	Clean-up	9.1	Area cleared to specification.
		9.2	Waste material removed and placed into job waste bins or rubbish stockpiles.
		9.3	Tools and equipment cleaned, maintained and stored.

RANGE STATEMENT

This unit applies to the mono-strand post tensioning process used to apply stress to a concrete structure or element in its designed construction.

Types of structures include:

- buildings
- bridges
- towers
- tanks
- silos
- stayed structures
- offshore platforms
- underground and submerged structures

Types of structural elements include:

- slabs
- beams
- columns

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OH&S requirements to be in accordance with Statutory Legislation and Regulations and may include:

- workplace environment and safety
- protective clothing and equipment
- use of tools and equipment
- handling of materials
- working platforms

Quality Assurance requirements may include:

- workplace operations and procedures
- quality of materials
- control of handling procedures
- use and maintenance of equipment
- attention to specifications of work
- post tensioning operation and procedures

Personal protective equipment may include:

- safety goggles/glasses
- ear plugs/muffs
- dust masks/respirators
- boots
- gloves
- hard hat

Tools and equipment may include but are not limited to:

- measuring tape/rule
- concrete mixer
- grouting equipment
- shovel
- hammer
- spanners
- stressing equipment
- trowel
- air compressor and hoses

EVIDENCE GUIDE

Competence is to be demonstrated by working with a team and carrying out the post tensioning of a structure or element from those listed within the range of variables statement.

(1) Critical Aspects of Evidence

It is essential that competence be observed in the following aspects:

- demonstrate compliance with Occupational Health and Safety regulations applicable to workplace operations
- indicate compliance with organisational policies and procedures
- select and use appropriate processes, tools and equipment to carry out tasks
- apply organisational quality procedures and processes within the context of post tensioning of concrete
- check materials for conformity with specifications
- determine and follow assembly location and placement sequence
- use safe and effective procedures in stressing tendons and locking anchorages to specifications
- carry out grouting application safely and effectively to specified requirements
- identify typical faults and problems that occur and necessary action taken to rectify
- interactively communicate with others to ensure safe and effective workplace operations
- complete of post tensioning process to specifications

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(2) Pre-requisite Relationship of Units

Pre-requisites for this unit are:

- BCGCOR0061A Use small plant and equipment
- BCGSTW0262A Carry out steel fixing

(3) Underpinning Knowledge and Skills

Knowledge
Knowledge of:

- workplace and equipment safety requirements including relevant statutory regulations, codes and standards
- post tensioning of concrete
- drawings and specifications
- safe stressing procedures with mono-strand technique
- calibration procedures
- maintaining stressing records
- visual inspection procedures
- factors affecting concrete bonding, curing and strength
- grouting equipment and procedures
- tools, plant and equipment

Skills
The ability to:

- work safely
- organise work
- interpret drawings and specifications
- use plant, tools and equipment
- measure and record information
- communicate effectively

(4) Resource Implications

The following resources should be made available:

- structure/structural element ready for post tensioning process
- materials, plant and equipment relevant to post-tensioning processes
- drawings and specifications relevant to activity
- material appropriate to application process

(5) Method of Assessment

Competency should be assessed through direct observation of application to tasks and questions related to underpinning knowledge.

Competency should be assessed while work is being done under limited supervision with regular checks at the various stages of the process and at the completion of the overall task in accordance with the performance criteria.

(6) Context of Assessment

Competency may be assessed in the workplace or simulated workplace setting.

Assessment should be while tasks are undertaken either individually or as part of a team under limited supervision.

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CRITICAL EMPLOYABILITY SKILLS

Three levels of performance denote level of competency required to perform a task. These levels do not relate to the NCTVET Qualification Framework. They relate to the seven areas of generic competency that underpin effective workplace practices.

Levels of Competency		
Level 1.	Level 2.	Level 3.
• Carries out established processes • Makes judgement of quality using given criteria	• Manages process • Selects the criteria for the evaluation process	• Establishes principles and procedures • Evaluates and reshapes process • Establishes criteria for evaluation

Collect, analyse and organise information	Level 3	
Communicate ideas and information	Level 2	
Plan and organise activities	Level 3	
Work with others and in team	Level 2	
Use mathematical ideas and techniques	Level 3	
Solve problems	Level 2	
Use technology	Level 2	

Please refer to the Assessment Guidelines for advice on how to use the Critical Employability Skills.

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BCGSTW0983A: Carry out stress bar post tensioning

Competency Descriptor: This unit deals with the skills and knowledge required to prepare and carry out stress-bar post tensioning, and applies to individuals applying stress to concrete structures in the construction industry.

Competency Field: General and Civil Construction

ELEMENT OF COMPETENCY	PERFORMANCE CRITERIA
1. Plan job set-out	1.1 Quality Assurance requirements of company's construction operations recognised and adhered to.
	1.2 OH&S requirements for application tasks and workplace environment recognised and adhered to.
	1.3 Job material and equipment requirements identified from site drawings and engineer's specifications.
	1.4 Work area of stressing operation identified and located from site and engineer's drawings.
	1.5 Appropriate personal protective equipment selected, correctly fitted and used.
	1.6 Tools and equipment selected to carry out processes consistent with job requirements and checked for serviceability.
	1.7 Ducting located and laid in position to requirements of drawings and specifications.
2. Place bar and fit components	2.1 Bar and components placed and fitted according to manufacturer's specification.
3. Inspect bar layout and seal ducts	3.1 Bar layout inspected for compliance in accordance with Building Standards for Concrete Structures.
	3.2 Ducts sealed in accordance with manufacturer's specification.
4. Define work area	4.1 Safe working area defined according to manufacturer's design and OH&S regulations.
	4.2 Barricades erected where required isolating safe working area.
5. Set up jack, accessories and stress bars	5.1 Stressing jack and accessories placed and stressing carried out in accordance with manufacturer and engineer's specifications.

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		5.2	Nuts tightened and locked off during stressing procedure in accordance with normal stressing safety standards.
6.	Record extensions and seal anchorages	6.1	Extensions measured and recorded on standard Quality Assurance forms for approval by engineer.
		6.2	Anchorages sealed to prevent grout loss.
7.	Mix and pump grout	7.1	Cement grout mixed and pumped to the requirements of engineer's specifications.
8.	Clean up	8.1	Area cleared to specification.
		8.2	Waste materials removed and placed into job waste bins.
		8.3	Tools and equipment cleaned, maintained and stored.

RANGE OF VARIABLES

This unit applies to the stress-bar post tensioning process used to apply stress to a concrete structure or element in its designed construction.

Types of structures include:

- buildings
- bridges
- anchors
- wharves
- jetties

Types of structural elements include:

- pre-stressed beams and columns
- stay cable hangers
- tension piles and caissons
- stressed deck planks
- permanent and temporary ground anchors

OH&S requirements to be in accordance with Statutory Legislation and regulations and may include:

- workplace environment and safety
- protective clothing and equipment
- use of tools and equipment
- handling of materials
- working platforms

Quality Assurance requirements may include:

- workplace operations and procedures
- quality of materials
- control of handling procedures
- use and maintenance of equipment
- attention to specifications of work
- post tensioning operation and procedures

Tools and equipment may include but are not limited to:

- measuring tape/rule
- concrete mixer
- hammers
- stressing equipment
- shovels
- spanners
- grouting equipment
- trowels
- air compressor and hoses

Personal protective equipment may include:

- safety goggles/glasses
- ear plugs/muffs
- dust masks/respirators
- boots
- gloves
- hard hat

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EVIDENCE GUIDE

Competence is to be demonstrated by working with a team and carrying out the post tensioning on any of the structures or elements listed within the range of variables.

(1) Critical Aspects of Evidence

It is essential that competence be observed in the following aspects:

- demonstrate compliance with Occupational Health and Safety regulations applicable to workplace operations
- indicate compliance with organisational policies and procedures
- select and use appropriate processes, tools and equipment relevant to tasks
- apply of organisational quality procedures and processes within the context of post tensioning of concrete
- check materials for conformity with specifications
- determine and follow assembly location and placement sequence
- install, stress and lock off stress-bars to specification
- carry out grouting operations safely and effectively to engineers' specifications
- identify typical faults and problems that occur and necessary action taken to rectify
- interactively communicate with others to ensure safe and effective workplace operations
- completion of post tensioning process to specifications

(2) Pre-requisite Relationship of Units

Pre-requisites for this unit are:

- BCGCOR0061A Use small plant and equipment
- BCGSTW0262A Carry out steel fixing

(3) Underpinning Knowledge and Skills

Knowledge
Knowledge of:

- workplace and equipment safety requirements including relevant statutory regulations, codes and standards
- post tensioning of concrete
- safe stressing procedures with stress bar technique
- calibration procedures
- maintaining stressing records
- factors affecting concrete bonding, curing and strength
- grouting equipment and procedures
- tools, plant and equipment

Skills
The ability to:

- work safely
- organise work
- interpret drawings and specifications
- use plant, tools and equipment
- measure and record information
- communicate effectively

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(4) Resource Implications

The following resources should be provided:

- structure/structural element ready for post tensioning process
- construction materials appropriate to post tensioning process
- tools, plant and equipment appropriate to application processes
- appropriate communication of documentation relevant to tasks

(5) Method of Assessment

Competency should be assessed through direct observation of application to tasks and questions related to underpinning knowledge.

Assessment may be by intermittent checking at various stages of each task application or at the completion of each task in accordance with the performance criteria and specifications.

(6) Context of Assessment

Competency should be assessed in the work place.

Assessment should be while tasks are undertaken either individually or as part of a team under limited supervision.

CRITICAL EMPLOYABILITY SKILLS

Three levels of performance denote level of competency required to perform a task. These levels do not relate to the NCTVET Qualification Framework. They relate to the seven areas of generic competency that underpin effective workplace practices.

Levels of Competency		
Level 1.	Level 2.	Level 3.
• Carries out established processes • Makes judgement of quality using given criteria	• Manages process • Selects the criteria for the evaluation process	• Establishes principles and procedures • Evaluates and reshapes process • Establishes criteria for evaluation

Collect, analyse and organise information	Level 3	
Communicate ideas and information	Level 2	
Plan and organise activities	Level 3	
Work with others and in team	Level 2	
Use mathematical ideas and techniques	Level 3	
Solve problems	Level 2	
Use technology	Level 3	

Please refer to the Assessment Guidelines for advice on how to use the Critical Employability Skills.

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BCGCOR1583A: Read and interpret plans

Competency Descriptor: This unit deals with the skills and knowledge required to effectively read and interpret building plans and drawings, and applies to individuals working in the general & civil construction industry.

Competency Field: General Construction

ELEMENT OF COMPETENCY	PERFORMANCE CRITERIA
1. Identify types of drawings and their functions	1.1 Main types of plans and drawings used in the construction industry identified.
	1.2 Key functions of each type of drawing identified.
	1.3 Key users of these drawings identified.
2. Recognise commonly used symbols and abbreviations	2.1 Commonly used terms, symbols, scales and abbreviations recognised.
	2.2 Function of legend understood and explained.
3. Locate and identify key features on a site plan	3.1 Key features and dimensions of site identified and located.
	3.2 Orientation of site identified.
	3.3 Access from roadways to worksite located and identified.
	3.4 Services identified.
	3.5 Knowledge of construction details and conformity to building regulations demonstrated.
4. Identify and locate key features from sectional details and elevations	4.1 Specific key features identified correctly from sectional details and elevations.
	4.2 Structural features and horizontal/vertical measurements located.
	4.3 The ability to identify and relate to site survey of conditions of soil, natural damage, existing pits, foundations, drains, trees, etc. demonstrated.

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5.	Recognise amendments	5.1	Title panel checked. Verification that drawing used is latest amendment.
6.	Read and interpret specifications	6.1	Purpose of specifications identified.
		6.2	Types of details identified from specifications.
7.	Read and interpret other drawings and plans	7.1	Drainage requirements determined.
		7.2	Existing surface level and finished surface level identified.
		7.3	Evidence of ability to read and interpret basic plans of other occupational areas demonstrated.

RANGE STATEMENT

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment.

The following variables may be present for this particular unit**:**

Types of drawings include:

- site plans
- elevations
- floor plans
- foundation
- roof plan
- sectional plans/elevations
- structural details and specification providing illustrations and dimensions
- sectional plans/elevations
- details and specification providing illustrations and dimensions

Other drawings and plans:

- electrical
- plumbing
- drainage
- roads
- landscape

Key features of site plans may involve:

- shape of site
- proposed building/s
- roads
- easements
- existing buildings/structures
- services
- dimensions

Key features of plans and elevations may involve:

- type of structure – structural members
- shape of building/structure
- type of construction
- layout of rooms
- service requirements
- location of plant or machinery
- vertical and horizontal measurements

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Types of construction include but are not limited to:

- structural steel framed
- light steel framed
- timber framed
- reinforced concrete
- pre-cast concrete
- solid brick
- brick veneer

Services may include:

- drainage
- sewerage
- gas
- water
- electricity

Civil construction includes:

- tunnels
- bridges
- culverts
- earthworks and other types of construction

Types of structures include:

- single storey buildings
- double storey buildings
- multi storey buildings
- bridges
- fabricated towers
-

Types of details include but are not limited to:

- structural steelwork
- timber framework
- brickwork
- concrete work
- plastering

Orientation of site includes:

- relationship to 'north'
- location of roads
- relationship to roads and neighbouring sites

EVIDENCE GUIDE

Competency is to be demonstrated by effectively reading and interpreting drawings to locate or identify nominated features or functions in accordance with the performance criteria and the range listed within the range of variables statement.

(1) Critical Aspects and Evidence

It is essential that competence be observed in the following aspects:

- identify and understand various types of drawings
- identify dimensions, symbols, abbreviations and key features
- identify title panel and reference date as to up-to-date copy of drawings
- indicate sound understanding of purpose of specifications in accordance with the work orientation

(2) Pre-requisite Relationship of Units

- Nil

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(3) Underpinning Knowledge and Skills

Knowledge
Knowledge of:

- a range of drawings
- materials relative to drawings/specifications
- measurements and calculations
- symbols, dimensions and terminology

Skills
The ability to:

- read and interpret drawings
- measure accurately
- communicate effectively

(4) Resource Implications

The following resources should be made available:

- Suitable range of drawings and specifications

(5) Method of Assessment

Competency should be assessed while work is being done under direct supervision with regular checks, but may include some autonomy when working as part of a team.

Competency in this unit may be determined concurrently, based upon integrated project work.

Assessment may be by intermittent checking at the various stages of the job application in accordance with the performance criteria.

(6) Context of Assessment

Competency should be assessed in the workplace or simulated workplace environment in accordance with work practices and safety procedures.

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CRITICAL EMPLOYABILITY SKILLS

Three levels of performance denote level of competency required to perform a task. These levels do not relate to the NCTVET Qualifications Framework. They relate to the seven areas of generic competency that underpin effective workplace practices.

Levels of Competency		
Level 1	Level 2	Level 3
• Carries out established processes • Makes judgement of quality using given criteria	• Manages process • Selects the criteria for the evaluation process	• Establishes principles and procedures • Evaluates and reshapes process • Establishes criteria for evaluation

Collect, analyse and organise information	Level 1	
Communicate ideas and information	Level 1	
Plan and organise activities	Level 1	
Work with others and in team	Level 1	
Use mathematical ideas and techniques	Level 1	
Solve problems	Level 1	
Use technology	Level 1	

Please refer to the Assessment Guidelines for advice on how to use the Critical Employability Skills.

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