

REGISTERED NATIONAL STANDARD

UNIT OF COMPETENCY



Title:	Set out for brick and block work construction ¹				
TQF Level:	4	Credits:	5	Version:	1
National standard code:	NS153-04				
Associated qualification (and code):	National Certificate in Bricklaying and Blocklaying Level 4 QR-04-NQ-028-02-1005-26-01				
Approval date:	10 September 2026		Review date:	10 September 2031	
Purpose:	This unit describes the skills and knowledge required to establish accurate set-outs for building walls and structural components. It covers the process of measuring, marking and profiling building locations to ensure that construction work aligns with approved drawings, specifications and regulatory requirements. The unit includes setting out and installing string lines and profiles to define building walls and associated structures. All work must comply with the Tonga National Building Code, work health and safety requirements, and relevant legislation. In successfully completing this unit standard, learners are able to: • Read and interpret construction drawings, plans, and specifications to determine building layout and alignment requirements • Plan and sequence setting-out tasks in accordance with Tonga National Building Code, OHS, and workplace requirements • Apply workplace quality standards and compliance requirements when carrying out setting out • Inspect the worksite, identify hazards, locate underground and overhead services, and apply risk control measures • Apply safety requirements including signage, barricades, and safe work practices • Select and correctly use personal protective equipment (PPE) • Apply mathematical techniques and calculations to determine distances, angles, and building positions • Ensure measurements meet required tolerances (e.g., 3 mm over 10 m diagonals)				

¹ Due to safety issues inherent in working with electricity and combustible substances, all training and assessment activities must be in accordance with Tonga Building Code.

	• Use triangulation and geometry principles to establish right angles and building layout • Determine site boundaries using survey pegs and drawings • Establish building lines and alignment using string lines, pegs, and profiles • Apply correct principles of line, level, and plumb to ensure structural accuracy • Check and adjust building lines to achieve square and accurate layout • Determine building clearances, offsets, and positioning relative to boundaries or existing structures • Carry out setting out on different site conditions • Use and maintain tools and devices used for setting out • Identify faults and report equipment issues
Learning Outcome 1 (LO1)	Prepare for setting out for brick and block work construction
Performance standards	1.1 Read and interpret work instructions and plan sequence of work; 1.2 Plan all work to comply with Tonga National Building Code, occupational work health and safety, environmental and workplace requirements, drawings and specifications; 1.3 Select and check tools and equipment for serviceability and report any faults; 1.4 Select and use personal protective equipment (PPE) for each task; 1.5 Inspect work site, locate services, assess hazards and apply risk controls, including required signage and barricades; 1.6 Clear and clean the site.
Learning Outcome 2 (LO2)	Set out first line for building alignment
Performance Standards	2.1 Determine the distance of the building line from the boundary or existing building; 2.2 Determine approximate position and length of line and building clearances at each end from drawings and survey pegs; 2.3 Locate site datum for reference in relation to the height of profile; 2.4 Install pegs and profiles, ensuring that they are level across and between one another and have adequate provision to mark footing width on profile;

	2.5 Mark accurately location for line with nails on profiles and set taut string line to true alignment with boundary.
Learning Outcome 3 (LO3)	Set out right angled corners
Performance standards	3.1 Determine and mark corner of building with peg on set building line to true measurement from adjacent boundary; 3.2 Set up right angle using triangulation principles to line from corner peg; 3.3 Install profiles level to other profiles; 3.4 Set taut string line to right-angled alignment.
Learning Outcome 4 (LO4)	Install other building lines and check lines for square
Performance standards	4.1 Install profiles for remaining building lines level with established profiles; 4.2 Mark measurements for remaining building lines accurately, and nail on profiles to dimensions from drawings; 4.3 Set taut string lines to nailed locations on profiles; 4.4 Check measurements for accuracy; 4.5 Check diagonal measurements for square and adjust lines to provide square relationship within 3 mm tolerance over 10 metres.
Pre-requisites	NS133-03 Apply <i>Occupational Health and Safety</i> (OHS) requirements, policies and procedures
Co-requisites	N/A
Underpinning skill and knowledge	The following skills and knowledge underpin this unit standard: <u>Skills:</u> Planning and Preparation • Reading and interpreting construction drawings, specifications and survey information • Planning and sequencing work activities • Identifying site boundaries and existing services • Assessing site conditions and hazards and applying appropriate risk controls

	Techniques and Practices • Locating and working with survey pegs and boundary markers • Measuring distances accurately using tapes and other measuring devices • Installing pegs, profiles and string lines • Establishing building lines to specified setbacks and clearances • Setting out right angled corners using triangulation principles • Achieving level, plumb and alignment across multiple profiles • Checking diagonal measurements to confirm squareness within 3 mm tolerance over a minimum 10 m diagonal OHS and Work Practices • Selecting and correctly using personal protective equipment (PPE) • Using tools and equipment safely and correctly • Applying workplace and environmental procedures • Maintaining a safe and isolated work area using signage and barricades <u>Knowledge:</u> Regulatory and compliance • Requirements of the Tonga National Building Code • Workplace quality policies and standards • Occupational health and safety (OHS) requirements for setting-out activities Safety considerations • Hazard identification and risk control processes • Site isolation procedures and responsibilities • Safe work practices when working with tools, equipment, and site conditions • Construction and setting-out principles • Principles of line, level, and plumb in construction • Importance of accurate alignment and positioning of structures
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	• Methods of establishing boundaries and building lines Trade calculation • Geometry and measurement techniques used in construction • Triangulation methods for setting out right angles • Calculations for distances, offsets, and diagonals Plans and drawings interpretation • Features and symbols used in construction drawings • Interpretation of site plans, layout drawings, and specifications • Understanding measurements, scales, and building offsets Setting-out processes and techniques • Procedures for setting out buildings on flat and sloping sites • Methods for installing profiles, pegs, and string lines • Techniques for checking accuracy and squareness • Relationship between set-out lines and structural components • Clearances and positioning requirements relative to boundaries Tools and equipment • Types and uses of setting-out tools and devices • Capabilities and limitations of measuring instruments • Maintenance and safe handling of tools
Assessment requirements	<u>Assessment methods</u> may include more than one of the following: Direct Observation Assessment of learners while they are performing tasks in real time in a simulated environment. • The learner performs practical tasks. • The assessor watches the learner complete these tasks against a checklist or performance standards.

	Assessor Requirements • Use a structured observation checklist aligned to performance standards • Observe multiple occasions to ensure consistency of competence. • Record evidence of safe work practices, correct use of equipment, etc. • Provide immediate feedback where appropriate. • Ensure conditions reflect real workplace standards. Oral Questioning Verbal questions asked to assess the learner's understanding of knowledge and reasoning. • Conducted during or after practical tasks. • Can be structured (planned questions) or informal (follow-up probing). Assessor Requirements • Ask questions that test underpinning knowledge • Use open-ended questions • Confirm learner understanding where practical performance is not enough. Record responses clearly (notes or checklist). • Adjust language to suit learner literacy levels. Written Test A structured assessment requiring learners to provide written responses. Short-answer questions, multiple choice, or case scenarios. • Typically conducted off-site or in a classroom environment. Assessor Requirements • Design questions that assess knowledge. • Ensure the test is clear, aligned to unit requirements and appropriate for language, literacy, numeracy levels • Mark responses using a marking guide or model answers. • Provide feedback and identify gaps in knowledge. • Ensure results reflect the learner's independent performance. Work-Based Activity Assessment conducted in a real workplace while the learner performs actual job tasks. • Learners complete normal workplace duties. • Evidence is collected over time.
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	• Assessor Requirements • Coordinate with workplace supervisors. • Gather evidence such as - Observation reports, Supervisor feedback, etc. • Verify that tasks meet unit performance standards. • Ensure authenticity (learner's own work). • Confirm competence across different situations and timeframes. Assessment should use a combination of the above methods to ensure sufficient, valid, authentic, and current evidence of competence in both skills and knowledge, in line with unit requirements. <u>Context of Assessment:</u> Competency is to be assessed in the workplace or a simulated workplace environment that accurately reflects a real workplace setting. Assessment is to comply with relevant regulatory or relevant standards' requirements. Assessment of essential knowledge will usually be conducted in an off-site situation.
Moderation arrangements	1. Training providers must have their own moderation system approved by TNQAB before accreditation is granted: a) Relevant internal moderation processes are documented; b) Assessment is planned for each unit, and moderation processes are integrated into such plan. 2. Unless specified elsewhere, external moderation is conducted by the National Qualifications unit of TNQAB for all unit components of a national qualification: a) Samples of assessed activities are submitted for moderation; b) Moderation (external) forms are available on request.
Resource requirements	1. Power point presentations. 2. Trainer's Guide 3. Learner's Guide 4. Tonga National Building Code 5. Videos on site setting out 6. Plans and Specifications

	7. Tape measure 8. 30 metre tapes 9. String lines 10. Claw hammer 11. Sledge hammer 12. Spirit levels 13. Water level 14. Laser level 15. Automatic level 16. Plumb bob 17. Pegs 18. Batter boards 19. Saw 20. Battery drills 21. Structured assessment and evidence-collection tools 22. Crowbar 23. Nails and screws 24. Carpenter square 25. First aid kit 26. Steel pegs (assorted) 27. Nail bag/apron 28. Nail gun 29. Water tank (1000L) trailer 30. Wheel barrow 31. Walkie talkie (set) 32. Shovel 33. Nail puller 34. Pinch bar 35. Two tents (12x6m) 36. Portable generator 37. Heavy duty extension cord (30m X 3) 38. RCD safety device
Requirements to complete this unit	There are four (4) Learning outcomes and twenty (20) performance standards to measure competence. To demonstrate competence, the person studying this unit is:

	a. Required to demonstrate all LOs to the expected standards; b. Required to attain an Achieved Grade (Competent) to fulfil the requirements of the Unit Standard; c. Eligible to three (3) attempts to achieve the required competency within 14 days of the first attempt. Failure to achieve the required competency after three (3) attempts on the specific part of the assessment will require the person studying this Unit to re-enrol for the same Unit.
Important notes and definitions	<u>Notes:</u> 1. All training and assessment activities must be in accordance with Tonga National Building Code. 2. Assessors must comply with the Tonga national assessment and moderation requirements. <u>Definitions:</u> 1. <i>Building Line</i> refers to the line that indicates the position of a wall or structure in relation to site boundaries. 2. <i>Diagonal</i> refers to measurement taken between opposite corners of a layout to check if the structure is square. 3. <i>Level</i> refers to horizontal alignment 4. <i>Line</i> refers to straight alignment between two points 5. <i>Plumb</i> refers to vertical alignment 6. <i>PPE (Personal Protective Equipment)</i> refers to safety equipment such as helmets, boots, gloves, and high-visibility clothing. 7. <i>Profile</i> refers to a temporary structure used to support string lines and mark building positions and footing widths. 8. <i>Right Angle</i> is an angle used in construction to ensure corners are square and aligned correctly. 9. <i>Setting Out</i> refers to the process of transferring building measurements and layout details from drawings onto the ground to establish the correct position of structures.

	10. <i>Setting-Out Instruments</i> refer to tools used to measure and align structures (e.g., tape measures, spirit levels, automatic and laser levels) 11. <i>Site Boundary</i> refers to the legal perimeter of a construction site, usually identified by survey pegs. 12. <i>Survey Peg</i> refers to a marker placed by surveyors to indicate boundaries, reference points, or building positions. 13. Tolerance refers to the allowable variation in measurements 14. <i>Tonga National Building Code</i> is a set of technical provisions for the design and construction of buildings and structures in Tonga. 15. <i>Triangulation</i> is a mathematical method used to create right angles and accurate measurements using triangle geometry.
Public comments on unit	Please contact TNQAB National Qualifications Unit (email EnquireNQ@tnqab.to or Telephone 28136) if you like to discuss or suggest changes to the details of this unit.